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SMITHSONIAN DEPOSIT.

THE UNITED GAS IMPROVEMENT COMPANY,

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The Importance of Light in Industrial Occupations.

[By MR. WARFIELD WEBB.]

Those who have lost their eyesight are of little value in the industrial world, besides being burdens to themselves and others; and the one who has defective sight (caused by poor lighting) is sorely handicapped. In fact it is difficult for him to compete with others in the race for a livelihood. Now, the conservation of eyesight is one of the problems which is receiving great consideration by employers in every industry to.day.

It is a less costly matter to adopt safe and sane lighting methods in any store or plant than to ruin the eyes of the hundreds of workers obliged to earn their living in such occupations as are covered by this great industrial age. That the employers are taking this view of the matter is greatly in evidence, and decided steps looking toward better methods of lighting manufacturing establishments are being taken. Congestion has made it a matter of economy to get a structure that will be lighted by natural light at all times of the day, even in the summer months; but that there must be some means of lighting such that which will not prove a detriment to employees is evident. Every authority in the world realizes that no other light equals the natural element. This light is so diffused as to leave few if any marked shadows, permitting the rays to stream on all sides. But the difficulty is, how can this be obtained at all times? There is small opportunity for its admittance many times, and the laboring now done in large manufacturing structures is more exacting than was the case a few years ago.

The number of accidents that are frequent in many manufacturing plants can often be traced to the fault that the lighting is either poor or too brilliant, and in this latter instance there is danger that is almost as great as in the first defect. Those who have given this part of the subject any deep consideration are agreed that here lies the real foundation for many of the avoidable accidents. Speaking on this matter some time ago, one authority remarked that "Artificial light can hardly be expected to secure thorough diffusion and more than comparative freedom from shadows; but in many industries almost no attention has been paid to this point. Yet it is very important, for it has been shown that the retinal anesthesia and deep shadows that result from poor artificial lighting are potent factors in causing industrial accidents."

It is poor economy to endeavor to use an inferior system of lighting, in the belief that it is cheap, or that it will suffice to answer the purpose of an adequate system, since a few accidents will be far more costly to the best plant than would be the most costly lighting system. The danger to which workers are continually subjected where the practice of inferior lighting rules is such that it becomes a difficult matter to continue with such help, and to obviate the accidents that are only the natural outcome of this indifference. Of course, there is a wide margin to this topic. Note what has been said with regard to the accidents that are directly due to this carelessness: "The records of some 8,000 manufacturing plants," writes a man who has given the matter study, "over a period of 3 years showed a regular minimum of accidents during July and August, which gradually increased to a maximum in the dark, winter months. The influence was much more evident in occupations which require not so much bright light as diffuse light without shadows over large areas; as in the building trades, for instance."

The significance of this statement, as applied to the advantages of gas light, should not be passed by on account of the several favorable points noted. It is in the diffusion of light without shadows, which can be obtained with the modern gas light, where the study of the matter has been given care by the lighting engineer. The newer gas lighting methods counteract the very objection noted here with so much force. Gas arc lights evolve the soft rays that are restful to the eyes and that are free from these shadows. And the gas man should actually grasp the opportunities here for his work to improve the same.

It will be well to heed the following from the same authority, to see wherein there lies newer avenue of activity on the part of the gas companies to increase their power in the industrial field. The statement continues: "Indoor workers as often suffer accident from too much light as too little. Exact photometric measurements often show that the light of ordinary incandescent lamps, concentrated at the cutting point of a tool or a work bench, is often several times the intensity of daylight; but the eye adapts itself to this intensity, and when the workman turns from his overlighted work, perhaps in a room full of moving machinery, he is practically blind. What is needed, not only from the point of safety, but of health with comfort, is much less intensity and much better diffusion of light. This

applies to all walks of life. We have all become accustomed to using far more intense light than we need."

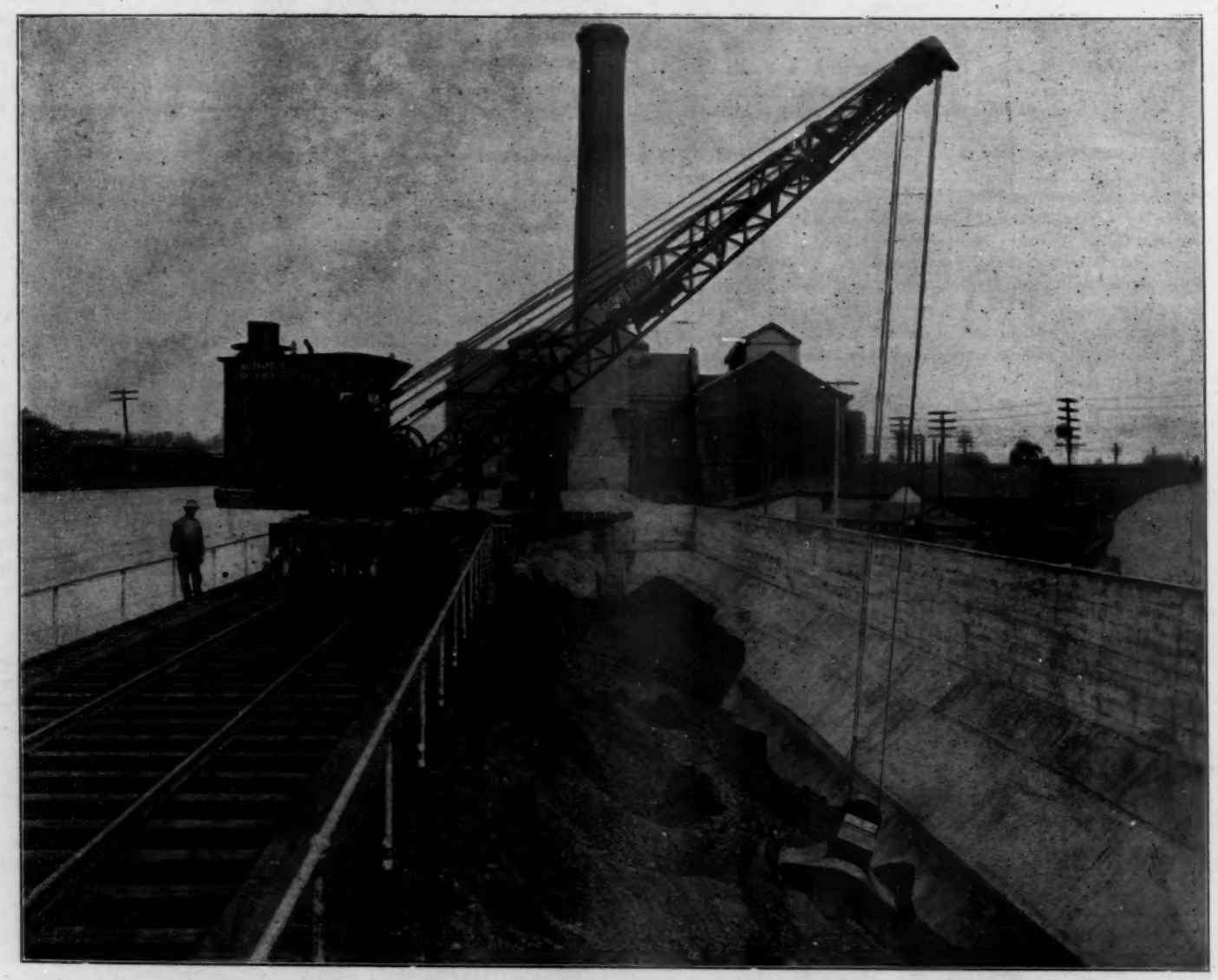
The many advantages of gas light are thus pointed out in a manner which should be noted with care by the one who hears so much in favor to-day of the electric light as a superior means of lighting any and all structures. It is not in the intensity of the light or in the brilliancy of the glare, but rather in the soft diffusion of the rays where one always finds as the ideal constituent of the modern gas lighted abode. The magnitude of this, as applied to the industrial world, is such as to cause far greater favor being shown the latter lighting system. There are many other considerations that must be considered in this lighting question which are of equal importance to the foregoing. Some pertain to the instance of eyestrain, and much harm is being done to the large majority of people to-day on such account. The average eyesight of the world is being seriously injured, not by overwork so much as by bad lighting. This cause, as now noted herewith, can be traced directly to that evil. It is true that "bad lighting undoubtedly causes unnecessary strain of the eyes with consequent premature muscular fatigue; it compels closer and more constant attention to the details of the work, so that tasks which should be done almost automatically and without mental effort are done consciously. Under such circumstances the output of each individual is manifestly less than it should be, there is a larger percentage of mistakes with material spoiled, and the number of accidents (large and small) is vastly increased."

Careful consideration of this subject will disclose a maze of matter involved in its study. Indeed it is really one of the larger questions of the day, and further it is one of the matters that demand even more thought than many that are now vastly farther in the forefront. The subject, however, is one that cannot be treated lightly. It demands and should command the thorough investigation of experts, and in many cases could well compel the special supervision of an expert, well versed in the matter for every individual case. That it should and does concern a larger number there can be no denying. That it will do so seems an assured fact from the interest that has been awakened within a short time. The cause of so much eye weakness or premature blindness is often traceable to the inferior lighting of many plants and stores, and the expression "inferior" may be taken to include too brilliant an illumination as well as one that is inadequate. The real solution can only come through much thought and prolonged experimenting at the hands of suppliers of both gas and electrical currents.

A Model Coal Storage Plant for the Indianapolis Light and Heat Company.

An unique coal storage plant was recently erected for the Indianapolis (Ind.) Light and Heat Company, and its novelty lies in the fact that provision has been made for submerging the coal under water to prevent spontaneous combustion. The house has a total storage capacity of 30,000 tons, thus providing against coal shortage, due to strikes at the mines or on the railroads, and to car shortage on the latter.

The plant consists of a large concrete pit (as shown in the illustration) 300 feet long by 100 feet wide, and 28 feet deep. It is 18 feet below ground level, having a 10-foot wall rising above the ground. Below the ground the wall slopes at an angle of 45°, which plan was followed with a view to reducing the cost of construction. This results in the pit being 72 feet in width by 272 feet in length on the bottom. The concrete, which is from 12 to 18 inches thick, is reinforced throughout with twisted ¾-inch square rods to withstand any pressure, from water that may rise in the gravel, around the pit.



Brownhoist 15-Ton Locomotive Crane, with 2-Yard Grab Bucket, for Handling Coal. Indianapolis Light and Heat Company, Indianapolis, Ind.

Through the middle of the pit lengthways, there is a row of concrete piers, placed 15 feet centers, the piers supporting a trestle over which there trails a standard gauge track. A standard, 15-ton, Brownhoist, locomotive crane travels back-and-forth on this trestle,

handling the coal on both sides with a Brownhoist 2-yard coal grab-bucket, suspended on a 40-foot boom. The crane and bucket are operated by one man from his stand in the cab, and, being self-propelled and equipped with M.C.B. trucks, couplers, and steam brake, the crane does the switching of the cars off and on the trestle. The coal cars are run out on the trestle with the crane and dumped, and when coal is required in the power house it is loaded into cars by the crane and carried to the boilers.

Forty pound rails are imbedded in the bottom of the pit, on 18-inch centers, with ½-inch of the head standing above the surface of the concrete. When the grab bucket is working on the bottom of the pit, the rails prevent the bucket from striking the concrete.

The pit is filled with water up to the ground level and covers 13,000 tons. The water is pumped into the pit by a 4-inch centrifugal pump, taking the water from the power house supply well, the water entering the pit at the ground level. Through the center of the pit, and beneath the trestle, there is a trough, 12 feet wide and 1 foot deep, which serves for drainage. It is fitted with a drain pipe which carries the water to either of two manholes, one at each end of the pit. The outlet openings are protected by gratings to prevent any coal from entering the drain pipe.

The pit was designed by Mr. Thos. A. Wynne, Vice-President of the Company, and was built under his supervision. The locomotive crane and bucket were furnished by The Brown Hoisting Machinery Company, of Cleveland, O.

A Gas and Electric and By-Products Recovery Plant at Accrington, England.

According to Mr. Harold Gray, in a recent number of the *Electrical Review* (London) the authorities of Accrington, England, have gone largely into gas engine use in connection with municipal work. He remarks:

Speaking generally, the suitability or otherwise of gas engine plant depends entirely on the working conditions which will have to be met. Under steady and continuous load conditions—such as exist in the case of the Accrington gas engines—such plant, working in conjunction with producers and ammonia and tar recovery plant, enables exceptionally low generating costs to be secured—the cost of fuel being either negligible or comparatively small.

The gas plant was supplied by the Power Gas Corporation, of Stockton-on-Tees. The producers, which are run on local bituminous coal, costing $3.35 per ton, are of the Mond pressure type, provided with water bottoms, and fitted with wide gratebars of the standard Mond pattern. Coal is delivered to a hopper below the road level, and lifted to the top of the bunkers by a bucket elevator, which delivers on to a distributing conveyor running over the bunkers. From the latter the coal falls into 4½-cwt. measuring hoppers, which discharge into the producer bells. The gas from each producer is led through a tubular superheater to a common collecting main. In passing through the superheaters, the hot gases raise the temperature of the steam and air supply to the producers to 225° C. The lower ends of the superheaters form dust-catchers, where the fine dust carried over with the gas is discharged at intervals.

From the collecting main, the gas, at a temperature of 400° C., passes through a washer, the interior of which is filled with fine water spray produced by two revolving dashers; and the sooty matter deposited is removed through lutes at the side. The gas, reduced in temperature to 80° C., then passes through a spray arrester, fitted with baffles, to an ammonia absorber, also containing two revolving dashers which, in this instance, produce spray from a liquid consisting of a solution of ammonium sulphate with about 2 per cent. of free sulphuric acid. The acid in this solution combines with the ammonia in the gas to produce sulphate of ammonia. The process is continuous; hence, as the liquor becomes augmented in strength, a certain portion is, from time to time, drawn off to a stock tank, and the remainder in the absorber is made up to the required volume with added water.

From the absorber, the gas passes through a second spray arrester and two vertical coolers (in which it meets cold water sprays and deposts the bulk of its tar) to a gas governor consisting of a small sensitive gasholder, the rise and fall of which—depending on the rate at which gas is being used—controls the supply of pressure air to the producers through the medium of a butterfly valve, which allows more or less of this air to be discharged to the atmosphere. The gas next passes through two centrifugal cleaners and a sawdust scrubber to the 18-inch gas main running to the engine house, prior to entering which, however, it is metered in a "Rotary" meter and passed through an anti-pulsator—another small gasholder similar to that already mentioned. The centrifugal cleaners, which run at 1,400 revolutions per minute, perform a triple function, as, in addition to removing all but a trace of the remaining tar (the trace being removed in the scrubber), they also cool the gas further, and raise its pressure sufficiently to give a small reserve for working the anti-pulsator. The tar from the centrifugal cleaners, as also that from the coolers, passes out through water sealed pipes to settling tanks, and is finally collected, steam heated in a boiler to get rid of any excess water, and sold at about $2.50 per ton to neighboring chemical works.

The air blast for the producers is obtained from two No. 3 Roots' blowers coupled to high speed steam engines. The air, at 45 cm. water pressure, is passed through an air heating tower, where it meets jets of the hot water which had been returned from the first gas cooling tower, taking up a proportion of water vapor and being raised in temperature. A considerable quantity of steam is also introduced into the blast (roughly 2½ tons, which includes ¾ ton from the air tower per ton of fuel gasified) prior to its being superheated to about 225° C. and entering the producers. The steam limits the temperature of the producer, preventing the formation of clinker and the destruction of the ammonia.

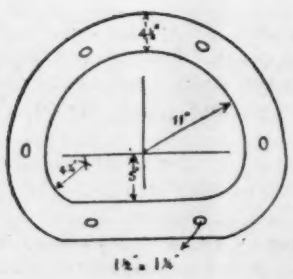
The blower house also contains four small, motor-driven centrifugal pumps, for circulating the water through the two gas cooling towers, the water cooling tower, which works in conjunction with them, and the air heating tower. A gauge board is also provided here, containing nine water gauges connected to various portions of the plant, the indications of which are logged at regular intervals, and show how the plant is working. The ammonia liquor from the stock tank is lifted by means of an ejector to a feed tank in the sulphate house, being drawn off and boiled in a vacuum evaporator until it begins to crystalize. The crystals are subsequently withdrawn and dried in a hydro extractor; the product, known as grey sulphate, being sold for about $62.50 per ton. At the present time, about 86 tons of coal per week is being gasified, and as by-products, 3¼ tons of sulphate and 10 tons of tar are obtained. The clean gas is delivered to the engines at 7 cm. water pressure and 25° C. temperature. The gas plant is worked in conjunction with a fully equipped chemical laboratory, where daily tests of the fuel, gas and by-products are carried out.

Turning to the engine house, there are installed two 1,000-brake horse power gas engines, direct-coupled to alternators and exciters. The engines are of the 4-crank, vertical, inclosed pattern, each having 8 cylinders arranged in tandem pairs—the lower ones 22 inches diameter, and the upper ones 23 inches diameter, to allow of the lower pistons being easily withdrawn. The air of the engines is drawn in through admitters in the engine room, which are silent in action, and is mixed with the gas at the cylinder head. The exhaust from each engine is passed through a special locomotive type boiler, which generates steam at about 100 pounds pressure, for supplying the needs of the producer plant, and effectively silences the escaping gases. The cylinder cooling water from each engine is circulated through a Heenan cooler—an ingenious apparatus consisting practically of a large plate coiled in the form of a watch spring, which in revolving, slowly abstracts the heat from the water, and is in turn cooled by means of air blown on to it. The boilers and coolers are situated in the original boiler house together with the anti-pulsator and three compressed air starting tanks for the gas engines. A small, motor-driven compressor charges up the starting tanks to a pressure of 300 pounds per square inch.

The Accrington gas engines have now been running about 9 months and supplying a very large proportion of the load on the station, which is rapidly growing during the day, owing to the number of textile and machine works that have taken up electric driving. One of the engines runs throughout the 24 hours of the day; while the other runs from 6 A.M. to 5:30 P.M. Together, they generate about 120,000 units per week at the present time. The fuel consumption under these conditions is rather more than 1½ pounds per unit, costing about 2.5 cents. Against this there is to be credited from the sale of by-products about 1.4 cents per unit—leaving a fuel cost of 1.1 cents per unit generated. The gas engine plant generates three-phase 50-cycle current at 6,000 to 6,600 volts, and is linked up to the older high speed, direct current, steam-generating plant through three motor generators—an arrangement which allows for the economical distribution of the load between the steam and gas plant.

Plea for Standardizing Retorts.

The matter of the standardizing of retorts is receiving much attention in the thought of European gas engineers, and properly so; for there the disparities in respect of retort dimensions are many and marked. One prominent champion along this line is Mr. John H. Brearly, who, in a communication to the *Gas World*, forwarded the accompanying drawings to scale of templates which, as he declares, ring the changes on 22-inch and 21-inch and 15-inch and 16-inch longitudinal diameters. Continuing, Mr. Brearly says: "Here are 24 silent witnesses for standardization; and there is no pretence that the list is exhaustive. They are all reproduced from templates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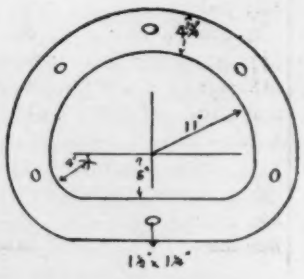
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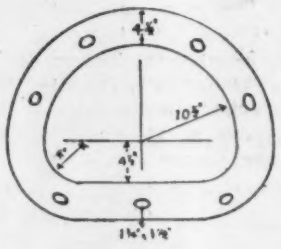
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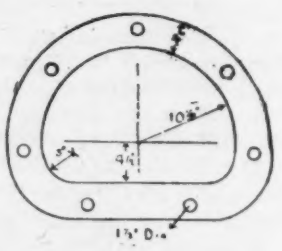
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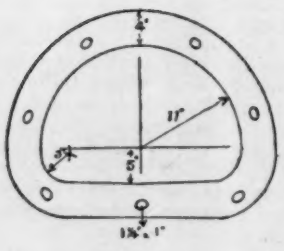
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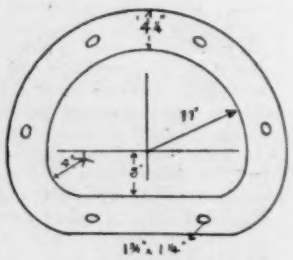
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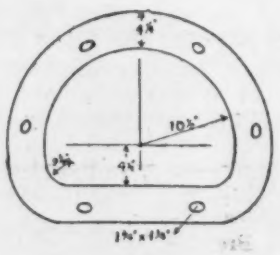
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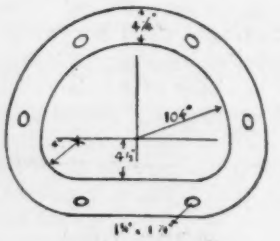
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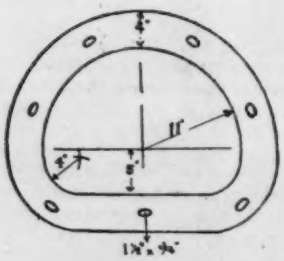
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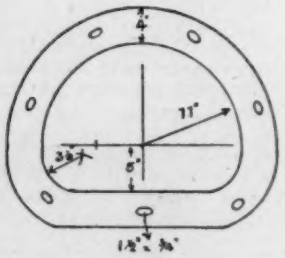
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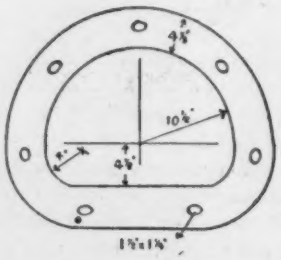
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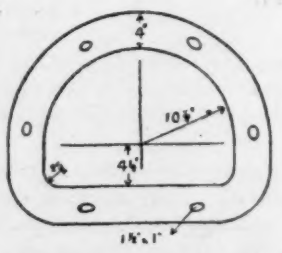
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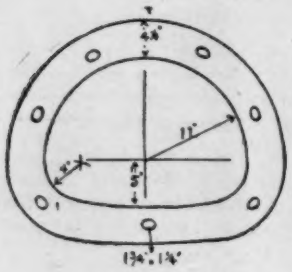
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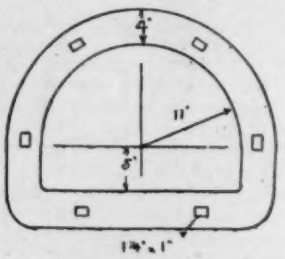
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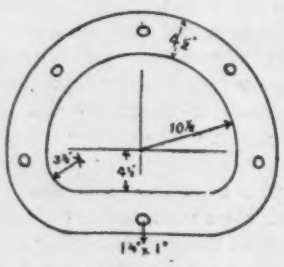
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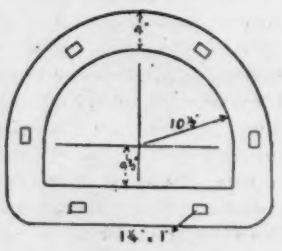
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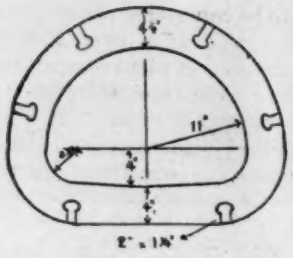
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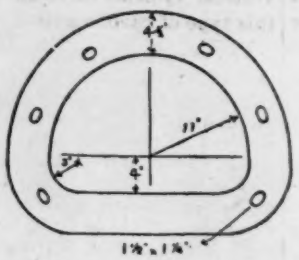
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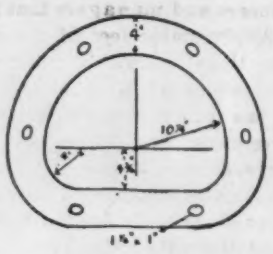
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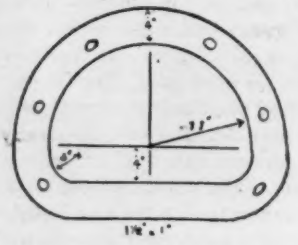
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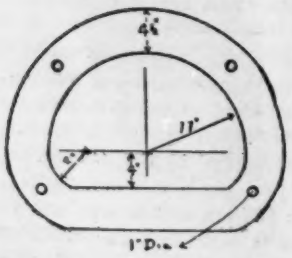
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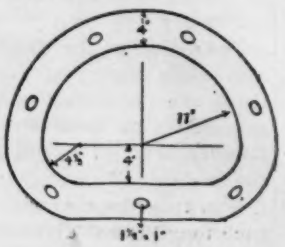
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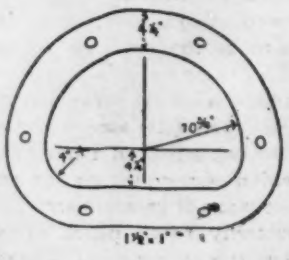
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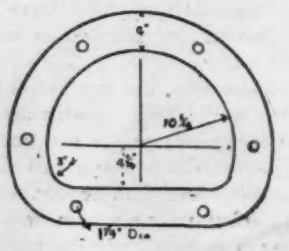
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of retorts which are being actually furnished to gas works at the present time. No doubt some of your readers, if they choose, will be able to subpœna other witnesses bearing similar testimony. Words fail to convey as adequately as these dumb outlines the fatuity into which our retort making has drifted. The horizontal retort, particularly in small works, has by no means reached the end of its tether. Cannot something be done to put retort making upon sounder business lines by adopting a standardized form for use where retorts of the above diameters are required for new bench work?"

What Type of Carbonizing Plant Shall We Adopt?

[Prepared by Mr. Frederick Burnett, Toronto, for the Sixth Meeting, Canadian Gas Association.]

This is a question agitating the minds of a great many operators of Canadian gas plants at the present time. The high price of gas oil has forced those who have been entirely dependent upon carbureted water gas plant for the supply of gas, to give careful consideration to other methods of gas manufacture in order, if possible, to find some type of plant with which gas of suitable quality could be made at a cost per 1,000 cubic feet below that of carbureted water gas, using oil at the present high prices.

Had the present situation arisen 5 years ago the only question would have been "Shall we put in horizontals or inclines?" But since that time advances in the art of carbonization have been rapid, and a number of systems have been developed, each with considerable merit, so that the engineer or manager of a reasonably large gas plant to-day finds it necessary to carefully weigh the merits of at least 6 different types of carbonizing plant, all of which have been demonstrated to be efficient, and each having some points of superiority, either in design or adaptability, to the needs of various sized gas works. The 6 systems referred to are the following: Horizontals, inclines, intermittent verticals, continuous verticals, horizontal chamber ovens and inclined chamber ovens.

Each of these types has many variations, which complicates the matter considerably when a manager is looking for some system that, in his particular works, will give the best results, capital cost, operating costs and everything else being taken into consideration.

The horizontal types of benches are supplied with furnaces, either direct-fired, semi-regenerative or full regenerative, and either stop end, or through retorts, from 12 feet long to 22 feet 3 inches long. The means of operating the horizontals may be either by hand or by machinery, and it requires careful calculation to determine what the size of the plant must be before it will pay to turn from hand to machine operation.

There are many types of charging and discharging machines for horizontal benches on the market, and this necessitates a careful survey of the local situation before a decision as to the type of machines to be adopted can be arrived at. Local conditions, such as space available, method of handling coal and coke, and many other factors have to be carefully considered before a final decision can be reached.

It is the general opinion of gas engineers and managers that for Canadian gas works making less than 250,000 cubic feet of gas per day there is, at present, no plant, other than horizontal benches, which need be considered; but even with these comparatively small plants the question arises as to whether the introduction of manual charging and discharging machinery would not be justified by the decreased cost of labor and the better conditions under which the stokers would work.

Several manual discharging machines for short throughs (10 feet to 15 feet long) have been developed, and these appear to be giving satisfaction at points where they have been installed. The drawing of horizontal retorts is the bugbear of all gas house labor, and, by the use of the comparatively inexpensive discharging machine, which pushes the coke through to a conveyor or wagon on the discharge side of the bench, the worst feature of retort house work is eliminated. Charging the through retorts by hand is a simple and not exhausting form of labor. In these days of plentiful work it is difficult to obtain reliable men who will undertake the exhausting labor of drawing hot coke out immediately in front of them with the expenditure of great energy, and immediately thereafter charge the retorts over the pile of hot coke. The introduction of short through retorts and manual discharging machinery will do away with most of the exhausting work in small plants, and those who purpose introducing coal gas plant in works of comparatively small capacity would be well advised to carefully consider the advantages of the system just referred to.

In gas works putting out between 250,000 and 500,000 cubic feet per day the choice of carbonizing plant may be said to lie between the following: Horizontals, hand operated; horizontals, machine operated; inclines; verticals, intermittent type; verticals, continuous type.

The remarks regarding hand and machine operation in section relating to horizontal benches below 250,000 cubic feet per day apply to the installation of the same class up to 1,000,000 cubic feet per day; but the advantages of numerous systems of machinery for combined charging and discharging should not be overlooked when more than a capacity of 500,000 cubic feet per day is required.

Inclined benches have not proved to be much more satisfactory than horizontals, all things considered, and are not at the present time being installed at many plants, so this type will not be referred to at any length. They have proved quite satisfactory at many points; but, as far as can be learned from unprejudiced observers, have not shown sufficient superiority over horizontals to warrant their consideration for Canadian service.

We now come to the most interesting development in recent years along carbonizing lines, namely, the development of the vertical systems of carbonization as offered by three well-known firms, each of which has a large number of installations operating in various parts of the world.

While there are other vertical retort systems offered, some of which may have considerable merit, the three systems which have been introduced at so many points will serve to indicate the general types, and be sufficient for the purposes of this paper.

The "Dessau" system of vertical retorts is of the intermittent type, in which a large body of coal is charged into the retort, allowed to remain there until properly coked, and then allowed to drop through a bottom door into a conveyor, where it is quenched in the same manner as coke drawn from horizontal retorts. The "Woodall-Duckham" and the "Glover-West" systems are of the continuous type, the coal being fed by gravity into the top end of the retort, and the coke product extracted at the bottom end by simple mechanism. In the bottom section of the retorts, before reaching the extracting mechanism, the coke gives up a large proportion of its heat to air passing around the retort. This air is afterwards used, in one system, as secondary air, and in the other as primary.

We thus have the choice of three types of vertical retorts, each having points of superiority over the others, and all having the great advantage of lowered labor costs, increased make per ton of coal, less ground space occupied, elimination of naphthaline troubles, and, in the case of the two continuous systems, absence of smoke and flame and the presence of very little dust, the coal feeding in by gravity at the top of the bench from closed hoppers and coming out at the bottom by gravity from sealed chambers as coke, without sufficient heat left in it to require quenching.

The nature of the coal to be carbonized and the local requirements with respect to size of coke would determine largely which of the two vertical systems (intermittent or continuous) should be adopted, if this type of carbonization is to be considered at any point.

Plants having a carbonizing capacity of over 1,000,000 cubic feet per day have, in addition to the types of plant enumerated in previous paragraphs, the advantage of consideration of further types, such as chamber ovens, both horizontal and inclined, which have been developed in Germany to a point of high efficiency. One installation of chamber ovens of the horizontal type has been erected on this side of the Atlantic at Muncie, Ind., and it is said to be quite satisfactory.

By-product coke ovens have not been mentioned as possible for consideration in plants of 1,000,000 cubic feet per day or over, as it is the consensus of opinion that, as gas is simply a by-product from such plants, and their continuous operation depends largely upon the market for metallurgical coke, they cannot at all times be depended upon to maintain a steady output of gas and should, therefore, not be considered as gas works plant, although, if other interests contemplate the erection of coke ovens in the vicinity of a gas plant, it would be good business (if the gas could be obtained at a fair price) to purchase and distribute coke oven gas, in the same manner that so many of our Canadian gas companies are handling natural gas.

While this paper has generally outlined the various systems of carbonizing plant which are available, it must rest with the individual operator and his advisers to choose the type of plant which, all things considered, is best suited to the particular needs, and, with gas works

spread over an expanse of country over 3,000 miles wide, with coal of varying grades at different points, and a wide variation in cost of labor and price of residuals, it can readily be seen that a plant which might suit a Nova Scotia gas works would not do for Ontario; and the Northwest Provinces and British Columbia might find it profitable to put in a system different from those decided upon for the Eastern Provinces.

To attempt any comparison, between the results which could be expected from the various types of carbonizing plant, would necessitate a paper much longer than you would care to listen to, and undoubtedly result in a great deal of controversy, as the advocates of each particular system would probably be able to show results at some point better than the writer of a paper would give the system credit for from a general knowledge of average results. During the past few years we have heard a lot of fairy tales about wonderful results from carbonization of coal, but investigation usually results in the discovery that there was something exceptional about the tests, and that such results as were obtained could not be hoped for in ordinary working.

The main points to be considered should not be "How little can be spent on capital account to get the daily capacity desired," but rather "how much can be spent and the operating and depreciation charges thereby reduced, to show a good return on the capital invested."

If a carbonizing plant can be installed for, say $50,000, to give the desired output, and yet cost much more to operate than a plant of the same capacity costing, say $75,000, showing big interest returns on the additional cost, after providing for the increased depreciation (if any), it is poor business to invest only the smaller sum, and this point is worthy of the fullest consideration when extensions are being discussed. The last suggestion is that, when deciding on a location for your carbonizing plant, you should so plan that extensions may be made from time to time to the best advantage. We are all apt to figure only a few years ahead, but in this growing time of our glorious Dominion we should prepare for thousands where we have only hundreds now; and, if we neglect to do this, our successors will blame instead of bless us.

Address of the President (Mr. Arthur Hewitt) on the Occasion of the Sixth Annual Meeting Canadian Gas Association: Toronto, Ont., August 27 and 28.

Gentlemen: It gives me great pleasure to welcome you to Toronto again, on this the occasion of the Sixth Annual Meeting of the Canadian Gas Association. The memory of last years's convention, and of the delightful visit of our friends of the Michigan Gas Association, are still fresh in our minds; and I trust that our meeting this year will not be unfruitful, that the bonds of friendship will be strengthened, and that each of us may find that it has been worth while to make effort to attend this convention.

In reviewing the past year, from the standpoint of gas industry development, we must be impressed with the fact that the Canadian public is realizing, as never before, the advantage of gas as an economic means of transporting the heat content of coal. So great has been the increase in the demand for gas, that the larger companies, at all events, have found it absolutely necessary to greatly augment their manufacturing and distributing plants. This necessity has forced new problems upon us. In considering extensions to manufacturing plant, many important questions have arisen. Shall it be coal gas, water gas, or both? If coal gas, as someone has said, "How?" Horizontals, verticals, chamber ovens or coke ovens? If water gas, what about the price of oil? And how long will it be possible for gas companies to secure a supply of oil at all?

Fortunately, for Canada and the United States, the English gas companies have stuck pretty consistently to coal gas, and the results of their experience are now being studied in the United States and Canada, with the greatest possible interest. There has been much improvement made in the various types of vertical retort settings within very recent years, and, as the illuminating power of gas, as a standard, has become much less important than formerly, the general trend appears to be decidedly favorable to the introduction of these types of settings. It seems altogether probable that there will be a good deal of activity among Canadian and American gas companies, during the next few years, along this line.

It is probably a fact that in England 75 per cent. to 80 per cent. of the manufactured gas is coal gas, while of the gas manufactured in the United States 70 per cent. is water gas. What effect a reversal of the practice in the United States may have on the future price of oil is problematical; but there is probably no other matter giving so serious concern to the American companies as the great and continuing increase in the price of gas oil. The prospect of large additions being made to coal gas plants has already affected the price of gas coal, and it seems not improbable that further advances will be made as these proposed additions to coal gas plants become realized in fact.

There is the further fact that the cost of labor has materially increased during the past few years, and, bearing all these things in mind, it is difficult to see how gas companies can possibly hope to do better than maintain the present rates charged for gas; and, if they are not actually forced to increase them, it will be a matter for congratulation.

The wisdom of again urging upon the Government the abolition of the customs duty upon bituminous coal, used for the manufacture of gas, has been considered, and it is a question for this convention to decide what, if any, further action shall be taken. The Department of Customs has recently made a ruling which will be very serious in its effect upon Canadian gas companies. For many years firebrick used in retort settings, generators, etc., has been permitted to enter the country free of duty. The old tariff, "Item No. 281," provided for firebrick of a class or kind not made in Canada to enter free. Under a ruling contained in Bulletin No. 266, firebricks valued at $13 per 1,000 or over were admitted free. By a new ruling, Bulletin No. 653, firebricks, valued at $19.50 per 1,000 or over, and silica bricks, $16 per 1,000, are permitted a free entry. This last ruling is the one which forces gas companies to pay upon ordinary firebrick imported from England or Scotland a duty of 12½ per cent., and from the United States a duty of 22½ per cent. Representations have been made to the Department, but so far the objectionable ruling has not been withdrawn. A resolution will be presented at this meeting looking to the further pressing of the matter upon the attention of the Customs Department, and providing for a deputation to lay the facts of the case more fully before the Board of Customs.

There is good prospect of the Gas Act being revised and modernized in the very near future, an important officer of the Department of Standards having been commissioned to visit Great Britain and Germany for the purpose of studying the conditions generally governing the supply of gas in those countries. It will be indeed gratifying to the gas companies in Canada to be operating under laws which are framed to meet modern instead of ancient conditions. In this connection it is worthy of note that the Joint Committee of Calorimetry, of the Public Service Commission and gas corporations in the State of New York have, after nearly four years of deliberation, made a report along lines very closely resembling those on which this Association has been urging Government action, viz.: That the illuminating standard for gas be abolished and that a reasonable calorific value be established.

I was interested in reading the following statement, in the report (presented on the 1st inst.) to the shareholders of the Gas Light and Coke Company, London, England, by the Governor, Sir Corbett Woodall, who said:

"One item which occasionally appears in account No. 6, and it is present on this occasion to the amount £181, is that of forfeitures for deficiency in illuminating power. Such an item is always a matter of regret to the Directors, who are naturally anxious to comply with statutory requirements as regards the quality of gas supplied. For some years past the Company have had to live up to a double standard: (1) Of illuminating power; and (2), of calorific value. The first (illuminating power) is, in these days of incandescent mantles, of no moment; it is heat and not light that is required from very nearly the whole of the gas sent out. Further, the test is an unsatisfactory one; considerable differences appearing in the returns made by various observers of the same gas. The question of applying for the adoption of one (the calorific) standard only, is engaging the attention of gas companies generally, and of this Company particularly."

As you are aware, a "Gas Show" has again been arranged in connection with the Canadian National Exhibition, and I trust that the members of the Canadian Gas Association will spend as much time as they can spare at this show. Various manufacturers of gas appliances have interested themselves in this gas show, and I want them to feel that the gas company representatives in this Association are taking an enthusiastic interest in it; also, I trust that, to the ex-

tent of your ability and convenience, you will leave your orders with these manufacturers as a sure sign of your appreciation of their efforts to make the gas show a success.

In stepping down from the Presidency of the Canadian Gas Association, I desire to express to the members my sincere appreciation of the many kindnesses which they have shown to me during the three years that it has been my privilege and honor to occupy this position; and I desire also to recognize the efficient work which has been done by the members of the Executive Committee, and particularly by our esteemed Secretary, Mr. John Keillor.

The House Maintenance System.

[Prepared by Mr. N. E. Gerry, for the Sixth Meeting, Canadian Gas Association.]

Our house maintenance system was started in February, 1911, two men (carrying a suitcase filled with burners, mantles, glassware, etc.) calling on consumers. The men were instructed to clean all lighting glassware, regulate all lighting burners, tighten fixture keys, stop small leaks, etc., for which there was to be no charge. The supplies were to be installed, when requested by consumer, at the regular retail price, and were charged to the man at the same price.

The service has grown in such demand, that at present there are 30 men and 2 inspectors employed. The city has been divided into districts and one man put in each district. We are endeavoring to regulate and clean the burners in every house in the city at least 3 times a year, by having each man call at every house in his district that many times.

The men report every morning to turn in orders and cash, and receive supplies, which is done as follows: Copies of receipts for cash sales (Form No. 1), and copies of charge orders (Form No. 2) are

Consumers' Gas Company
APPLIANCE BRANCH
12-14 ADELAIDE ST. W. Phone Main 1933
Toronto.....191.
Sold to.....
Address.....
Sold by Cost by

1
2
3
4
5 (1)
6
7
8
9
10
11
12
13 926
14

totalled and a copy of supply list (Form No. 3) handed in to exchange the orders for supplies.

All calls received at the offices, up to noon, are attended to the same day. These are handed to the men on Form No. 4 in the morning, and at noon are given over the phone, the slips to confirm phone messages being given out the next morning when the men report.

These slips (Form No. 4) are filled in by the men and handed in every morning, totalled and entered on each man's monthly report (Form No. 5), adding the wages in the cost column, with the cost of goods sold, to be charged against amount of sales, and finding the daily average profit or loss per call. The number of lamps cleaned is recorded as a method of having a total of burners cleaned by each

No. 1961 The Consumers' Gas Co. of Toronto
COMMERCIAL DEPT. HOUSE MAINT. SERVICE
Date

The following Goods were Received in Good Order:

Quantity	No.	Make	Supplies	Amt.
		(2)		

Workman Signed Purchaser

(3) Date.....
Consumers' Gas Company
COMMERCIAL DEPARTMENT
HOUSE MAINTENANCE SUPPLY LIST

QU.	No.	GOODS		PR.	AMOUNT
	6	Burner		$1.00	
	5	"		1.00	
	1933	"		.40	
	4	"		.80	
	71	"		.40	
	82	"		.45	
	52	"		.35	
	6	Bypasses		.40	
	5	"		.40	
	4	"		.30	
	22	"		.25	
	0	"	Tubes	.10	
	4	"	"	.05	
	5	"	"		
	2	Mantles (Vert.			
	52	"			
	4	"			
	51				
	8				

Duplicate
The Consumers' Gas Company of Toronto
COMMERCIAL DEPARTMENT
HOUSE MAINTENANCE SERVICE
Date
Dist.

Quantity	No.	Make	Supplies	Amount
		(4)		

Lamps Cleaned	Complaints	Time	Date	Name

man. The complaint column is not used. It was intended to have representatives follow up all complaints in connection with the Company, but it has been deemed advisable to have all complaints made to the head office direct. The time column is kept as a record of the time the men account for on Form 4. At the end of the month the reports are summarized on Form No. 6. On this summary is shown the total average profit or loss per call.

Form No. 7 is a circular which is delivered by the men late in the afternoon, to the houses they are to canvass the next day. This is a means of identification and also to ensure the consumers being at home.

The house maintenance service was inaugurated to prove to the people of Toronto that the best light is obtainable from gas with the use of up-to-date burners, and to give them this service, making gas lighting equally or more convenient than any other form of lighting.

1. This, we think, has been accomplished, and, owing to the keen electrical competition, a great many houses that are lighted by gas would be using electricity if it were not for the service given by the house maintenance force.

(*Continued on page* 154.)

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NOTICE TO ADVERTISERS.

New Advertisements and changes of copy therefor should be in hand Wednesday noon of week prior to date of issue.

NEW YORK, MONDAY, SEPTEMBER 8, 1913.

[Official Notice.]

Annual Meeting, Michigan Gas Association.

Michigan Gas Association,
Office of Secretary,
Grand Rapids, August 12, 1913.

To the Members, Michigan Gas Association: Did you ever hear Mr. Herbert N. Casson talk to the gas men? Did you ever hear him talk to anyone? Well; there is a great treat in store for you at the next meeting of our Association, for he will then talk to us on the subject of "How to Get Gas Across." Mr. Casson is great. He makes you laugh, cry, "sit up and take notice," and applaud his forcible, entertaining arguments, with his original ideas of modern business building. Then, too, we will have some mighty good papers, as witness:

"Practical Effects of the Workmen's Compensation Law," by Mr. Albert G. Schroeder.

"Gas Advertising," by Mr. Alonzo P. Ewing.

"The Increased Cost of Gas Making Materials," by Mr. B. O. Tippy.

"Educating the Public," by Mr. Ernest F. Lloyd.

Among other things our entertainment programme will include an afternoon boat trip and supper at Bois Blanc. On the boat we will have another good talk by a very prominent newspaper man, who will tell us some things that we all ought to know. A meeting in Detroit always brings out a big crowd, and this promises to be one of the big meetings.

The city, Detroit; the place, Hotel Pontchartrain; the time, September 17, 18 and 19th. Make your hotel reservations now.

Yours very truly,
Glenn R. Chamberlain, Secy. and Treas.

[Official Notice.]

Time and Place of Next Meeting, Iowa Gas Association.

Iowa District Gas Association,
Office of Secretary,
Des Moines, Ia., Aug, 22, 1913.

To the Members, Iowa District Gas Association—Gentlemen: The Council of the Iowa District Gas Association has decided to hold the next annual meeting in Davenport, Ia., on May 27th, 28th and 29th, 1914.

Yours very truly,
G. I. Vincent, Sec.-Treas.

BRIEFLY TOLD.

The Closing Times of the Canadian Gas Association's Sixth Session.—Taking up our story of the Canadian Gas Association's recent session at Toronto, from our rather abrupt division of the account last week, it may be reported that the final session was convened at 10 A.M. of the 29th ult. The regular paper list was first in order, and the sequence was a series of 4 communications that had much inter-relation. First was the main story of "Lighting," as carried on by the Consumers' Gas Company, of Toronto. It was well and thoroughly recounted, the various chapters being contributed in this order: "Gas Lighting," by Mr. W. Kennedy; "House Maintenance System," by Mr. N. E. Gerry; "Commercial," by Mr. George H. Hills; "Factory," by Mr. J. A. Forney. All four were, as suggested above, descriptive of the practices of the Toronto Company; and they surely showed how cleverly that work is being done in Canada's most progressive city, by Canada's most advanced gas company. The papers also showed how various departments, although separately managed, can be made to intermesh without either straining or friction. Next came the paper by that clever narrator, Mr. Fred. Burnett, whose narrative was interwoven with the query, "What Type of Carbonizing Plant Shall We Adopt?" While he did not specifically answer the question, he noted well the general points to be considered in reaching a decision. The discussion brought out a list of good points, although none seemed to take up the cudgels on behalf of inclines. However, these latter may be shown in two large Eastern States examples, each or both of which leaves nothing to be desired on the part of their operators. Good and interesting mention of the "throughs," in use in the Consumers' modern plant in Toronto, was contributed by Superintendent Jefferis, as to whose practicalness none may truthfully deny. By-the-way this horizontal through installation in Toronto comes near the largest extant, in that the carbonizing vessels are 22 feet 8 inches in length. Next came the considering of the invitation that the Association participate in the Gas Congress, to be held in San Francisco, in 1915, the debate ending in a reference to the Executive Committee, with power to act. At 1:30 P.M., the members and their other halves congregated at the wharf to board a special boat in waiting to carry them to the beautifnl island home of the Royal Canadian Yacht Club. In this near approach to fairy land the guests were pleasantly reminded that even fairy land may serve to accentuate a good luncheon; and it certainly was in every sense a good one. Mr. Hewitt acted as Toastmaster, which is assurance that "after the walnuts" the time was well-directed and well spent. When the King had been toasted and cheered, a period of short speechmaking prevailed, during which the guests listened to words of wisdom from Mr. Carter, of Guelph; Mr. Schall, of Detroit, Mich.; Mr. W. S. Guitteau, also (if it is necessary to so add) of Detroit; Mr. Gurney, of Toronto; and Mr. S. K. Campbell, of the Journal's staff. Just prior to the ending of the feast, Mr. Dion (President-elect) on behalf of the Association, presented Mr. Hewitt with a beautiful silver tea service, as a testimonial to the esteem in which his fellow members held him, and as an appreciation of the excellent work done by him in behalf of the Association during his three terms as President. The usually self-possessed gentleman was this time taken completely unaware; but his speech in response showed, by tone rather more than words, how he regarded this act of his confreres. The company had the freedom of the Club House and its beautiful grounds during the magnificent Canadian afternoon, and plenty of added zest came through their witnessing some spirited yacht racing on the bay, and some good contests in the tennis courts and on the bowling greens.—Camp.

President Hewitt's Address.—Elsewhere (pp. 150, 151) in this issue will be found the text of the address of President Hewitt, as delivered by that gentleman during the progress of the sixth annual of the Canadian Gas Association. As a document befitting its nature, the clever gentleman, who, in official position, manages so well the business policies of the Consumers Gas Company, of Toronto, confines himself largely, and with good judgment, to the gas affairs of that district which is undoubtedly England's greatest offspring; but, in that confining, he nevertheless directly alludes to a matter-of-fact which pointedly concerns the gas makers of all America. The particular allusion is in the fifth paragraph of his admirable presentation; and to emphasize it we here repeat it: "There is the further fact that the cost of labor has materially increased during the past few years, and, bearing all these things in mind, it is difficult to see how gas companies can possibly hope to do better than maintain the

present rates charged for gas; and, if they are not actually forced to increase them, it will be a matter for congratulation." Good thought; well expressed. Heretofore it has been the safeguarding policy of American gas makers to sell gas at the lowest rate possible, consistent with anything like a fair return on the capital invested; and hereafter we undoubtedly will witness a continuance of such policy. But the time is at hand when the gas makers are forced to consider the cost. Every material (including the very material one of labor) of avail in gas making has been advancing in such ratio that the costs of manufacture of 2 years ago, are certainly exceeded by at least 60 per cent. in respect of those of to-day; so, self-preservation (let alone further advancement) is really bound-up in Mr. Hewitt's tersely put lines. "* * * And if they are not forced to increase them [rates], it will be a matter for congratulation."

CURRENT MENTION.—

MR. L. I. POLLITT, the wideawake, always observing gentleman, who is Vice-President and General Manager of the Southern Gas and Electric Corporation, Baltimore, Md., in a message dated the 3d inst, writes us: "It might be that some may not get an altogether correct impression, from the first item under the caption 'Briefly Told,' in your issue of September 1st. The Henrico County Gas Company, one of our constituent companies, is practically supplying all the suburbs of Richmond, Va., and its Superintendent (Mr. F. L. Marshall), who is on the Committee of Arrangements, I think is doing especially fine work locally in preparing for the comfort and contemplated delightful entertainment of the American Gas Institute. We desire all members of the Institute to know that, anything we can do to prepare for their comfort in general, or any arrangement we can make for any individual member in particular, our services are to be commanded. I predict one of the most successful meetings the Institute has ever had. Press and city are enthusiastic about its coming; the hotels are as good as can be found anywhere else; and Richmond is going to try to show the Institute what Southern hospitality means."

THE August records of the Superior Court (Providence, R. I.) show that Isabella Boehne, of Providence, has instituted suit before the named body, to recover damage from the Providence Gas Company in the sum of $5,000. She alleges that, on a certain date, through the failure of the defendant "to keep its meter and gas pipes in order, in the dwelling house, 259 Blackstone street," gas escaped and "permeated her sleeping room." As a result she was "poisoned, suffocated and her life endangered." The recital continuing, declares this inhaling brought on "asthmatic attacks, first affecting her heart and kidneys." While the array of ailments enumerated is imposing and serious, nevertheless it is somewhat reassuring to know that no bones were in anywise injured. A member of the bar, named John F. Collins, is attorney for the plaintiff.

THE August output of the plants of the Boston Consolidated Gas Company showed a gain of 2.3 per cent., as against a gain of 7.45 per cent. in August, 1912. While this gain is apparently small, relatively, it is well to remember that last August was noted by meteorologists as a month almost phenomenal for the number of hours of sunshine that characterized it.

MESSRS. LOUCKES & CLARK, of Hartford, Conn., have been awarded the contract for the construction of the new boiler house that will be erected to the order of the proprietors of the Wallingford (Conn.) Gas Light Company.

"W. N. B.," writing from Providence, R. I., under date of the 29th ult., says: "I thought you might like to hear something about our third annual outing, which was duly put over last Saturday. About 300 of us traveled (in 'chartered cars,' mind you), to the Warwick Club, while the notables (including President John W. Ellis), very properly motored over, despising the soaring costs of gasoline. After a generous luncheon, the men from the office force tried issue at a game of baseball with the lads from the meter shop, and the 'plebes' trimmed the penmen by a score of 10 to 3. In the tug-of war, between the crews of the South station and the meter department, the Sassafras Point team put it all over their opponents. A further list of field sports was thoroughly enjoyed; and while I didn't mean to name any of the winners in the minor events, I can't help saying that the greatest cheering of a winner came when fat 'Jimmie' McCarrahan rolled home victorious in the race for the heavyweights. I might also say that 'Ernie' Hanke was very much in evidence in three contests. A shore dinner, of the real Providence sort, was of the kind that would put the stuff served by your Coney Island Feltman completely in the shade. Every expense connected with the outing was generously borne by the Providence Gas Company."

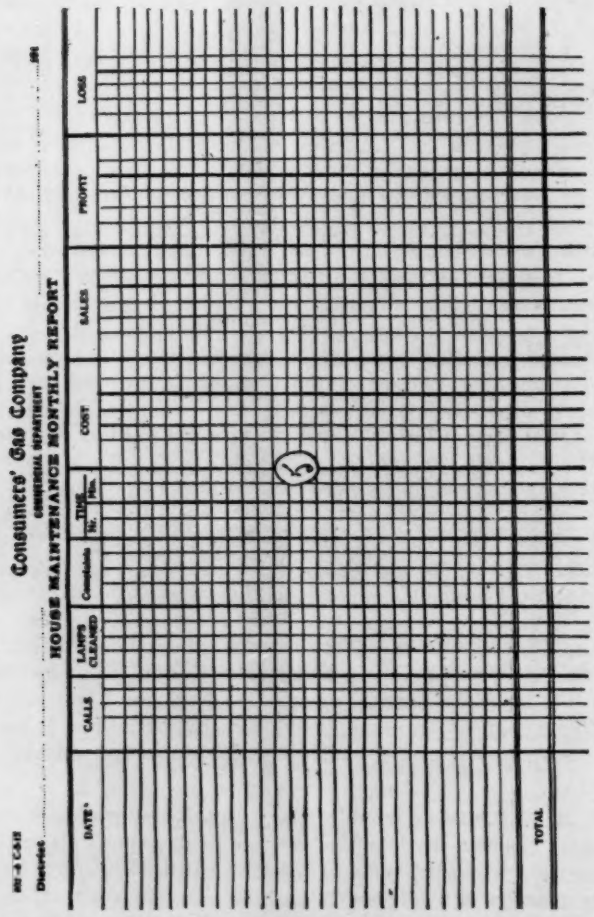
ADVICES from Milwaukee, Wis., in connection with the plan of the Manitowoc Gas Company before the Wisconsin Railroad Commission for the right to increase its selling rates, are to this effect: Counsel for Company asked that the question at issue be considered without delay, so that action under the decision might become effective on accounts to be sent out the 1st prox. The petition for revised rates, or ones that will enable the Company to make a fitting return on its investment, was filed with the local authorities the last week in December, 1912; but as no action had been taken thereon the Commission was appealed to. Amongst the Company's arguments for the advance were these: First, its tax valuation was increased, from $86,225 (1908) to $152,060, in 1912; meanwhile there was comparatively little growth in the volume of the Company's business through an increase in number of separate consumers; that the Company considers it is at present losing, under the rate last fixed by the Commission (1908), $500 per month. The total sales for 1912 footed up 35,654,000, which volume of sendout was declared to net the Company from the consumer an average of $1 per 1,000 cubic feet. Mr. R. C. Douglas, President-Secretary-General Manager of the Company, was examined by Attorney Nash, to place in the record precise facts regarding the Company's experience that were deemed essential to comply with the necessary formalities. Attorney Kelley, on behalf of the authorities, offered no set evidence in contention, merely satisfying himself with submitting a general objection. The rate schedule which it is sought to have abrogated is: $1.25 per 1,000 cubic feet, with 10 per cent. off for prompt payment; industrial se, $1 per 1,000 cubic feet for first 10,000 cubic feet, and 80 cents for all above first 10,000.

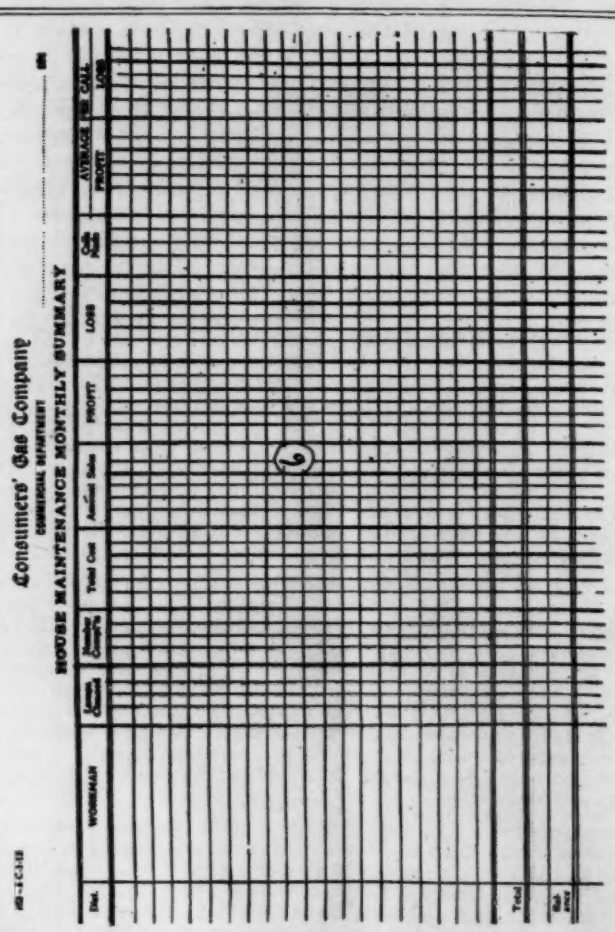
"W. M. M.," writing from Danbury, Conn., under date of the 28th ult., says: "About the 1st of October the local gas and electric lighting Company will remove its entire office equipment and business to its new quarters in what was formerly the Darragon Block, on Main street. The structure is undergoing transformation at the hands of an army of mechanics of all sorts; and when these shall have completed their tasks the building will stand as an examplar of business headquarters in this bustling business center. The main salesroom will be on the ground floor, the latter proper to be of bordered and edged pattern marbleoid. The partitions and the wainscoting are mission finish. At the back end of the salesroom stands a circular desk, quite after the hotel way, around which the everyday, ordinary business of the Company will be transacted. A marked feature of the room is a beautiful type of colonial mantel, finished in artistic tiling. The salesroom proper will be fitted after the fashion of the living-room of a modern home. On the second floor are seven rooms, which will be occupied as offices by the executives and the accounting staff. Here all the furniture and woodwork are of the mission type. On the third floor will be found the demonstration rooms, in and about which the various gas and electric appliances for lightening, speeding, and ornamenting the work and quarters of the housewife and help, will be properly displayed. Illustrative of the Company's commercial enterprise it seems proper to note that teams are being driven through and along the ways and streets of the city carrying banners bearing the name of the Company, and showing many useful gas and electric devices. The Company's good business ways have caused it to be quoted as an effective example of the commercial methods of Danbury and Bethel, much to their advertising benefit."

"SOME time ago an informal meeting was held in the rooms of the Mesa Commercial Club, Phoenix, Ariz., between representatives of the South Side Gas and Electric Company and of the city. The cause of the convocation was an offer by the proprietors of the named corporation to dispose of its plants to the city for operation on municipal account, the suggested selling price to be not far from $100,000. While no definite action was then taken, the tenor of the discussion was decidedly favorable to the proposition. The people are anxious that domestic or local control of the properties should be secured, and the owners are disposed to part with the property on equitable terms.—T. M. G."

IN respect of the application of the Pacific Gas and Electric Company, San Francisco, Cal., for an injunction in regard to the members of the California Light and Power Labor Council and their relations to the applicant, Judge Sturtevant ruled against petitioners. He states there was no real ground for the issuance of such a writ. The Company sought to have the striking members of the Power Council restrained from interfering with its employees or plant; and the Judge declared that no evidence had been presented in support of the contention that the strikers proposed to interfere with the employees or to injure the plant. In such event, he declared, the police powers of the city were amptly endowed with authority to act as they thought best in the preservation of law and order.

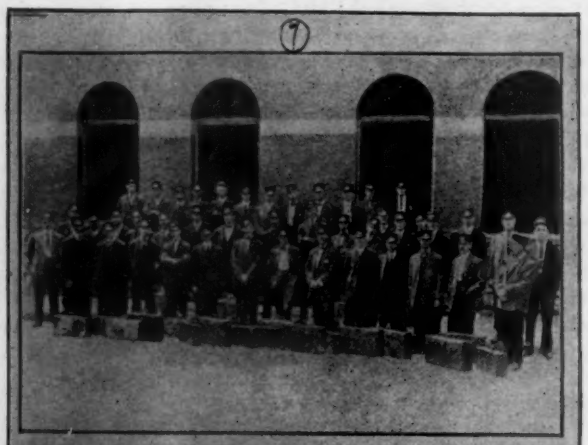
(Continued from page 151.)





2. If the men show ability at this work, they are given an opportunity to become salesmen, inspectors, office employees, etc., and in every case the experience they gain at the house maintenance work has proven of value to them in their new positions.

3. The information obtained from memos handed in by the men



Calling on You To-Morrow

Free Inspection of Your Gas Lights

ONE OF OUR GAS LAMP INSPECTORS WILL CALL ON YOU TO-MORROW TO CLEAN AND REGULATE ALL YOUR GAS LIGHTS FREE OF CHARGE

WE have forty inspectors. It is our plan to have these men call at every Residence in Toronto at least once every three months for the purpose of cleaning your gas lamps, and elsewhere, also to replace any faulty keys, burners, or mantles. These inspectors carry gas supplies, mantels, etc., with them which may be ordered and installed at the regular prices. **No extra charge for the work of putting them on.** It is not necessary for you to wait until one of our men call. He will come at once or whenever you require. A postcard or telephone message will bring immediate response. We will deliver anything you may want, no matter what the price may be. This service was inaugurated chiefly for the purpose of cleaning chandeliers, burners, etc., and is **not a scheme to sell supplies.** We are glad to take your order for anything you may require, but remember, You are under no obligation to buy. Neglected lamps have been the cause of much trouble. Our inspection service, for the cleaning and regulating of gas lamps, has been the means of saving to thousands of people, that gas light cannot be equalled. This service applies to residence lighting only.

Rush Messages Received up to 2 p.m. Attended to Same Day

THE CONSUMERS' GAS COMPANY

19 TORONTO STREET. SALESROOMS, 12-14 ADELAIDE ST. WEST

Telephone Main 1933 or 1188

are given to the salesmen in the form of prospects for appliances, fixtures, etc., and result in sales in a good many cases.

4. The fact that the Company is sending a man at regular intervals to overhaul the burners free of charge, at a cost of about 7½ cents per call to the Company, is a means of bringing the consumers into closer and more friendly relationship with the Company.

5. The total sales of the house maintenance men average about $2,000 per month. This includes nothing beyond the by-pass.

Commercial Lighting.

[Prepared by GEORGE H. HILLS, for Sixth Meeting, Canadian Gas Association.]

The communication I am about to read is descriptive of the methods used in the commercial lighting branch of our organization. Our sales force is composed of eight representatives, divided into groups. These groups are assigned to factory lighting, store lighting, and looking after new buildings, with a superintendent and an assistant.

The city is divided into districts with a representative in each district for the different kinds of work. To some it may appear that the districts as they are laid out are rather unevenly proportioned, as some are very much larger than others; but it must be remembered that these men deal only with commercial lighting and a variety of conditions in these districts makes this necessary. The districts have been laid out after a great deal of deliberation and consideration, and so satisfactory has this arrangement proven that we have not had occasion to change them for some considerable time.

Right here it seems proper to take up a subject with which most employers of help have been confronted, and that is the difficulty of obtaining satisfactory material. This has at least been our experience and, after a deal of trouble along this line, I now have good reason to believe that we have found the solution.

The reason for the scarcity of efficient men in this business I think is due to the fact that the gas profession is one which is not taken up by students in this country. The opposite may be said of our competitors, the electrical interests, whom I believe have a supply over-

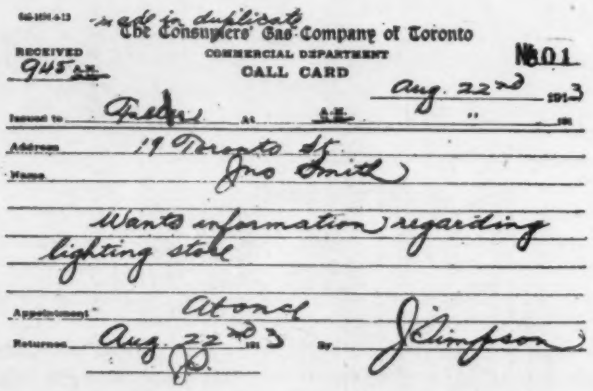
abundant of practically trained men. It is, therefore, difficult to get men who are capable of performing the duties necessary for the successful carrying on of the commercial lighting campaign. We have tried men from various walks of life. Some have had previous experience in various branches of the gas business, others have had none; and, after all is said and done, the success we have seems to depend almost entirely on the man. If there is any preference to be shown in selecting men for these positions we believe it should go to the men who have had general training in the gas business, for I believe we all know the most successful gas lighting experts have developed from men with wide experience in the gas business. Unfortunately, we are not able to secure enough of these, and it, therefore, is necessary to teach the men the business, which is both discouraging and costly, as we oftentimes spend a good deal of time with one who eventually proves an absolute failure. At the present time we are experimenting with a view to a plan of educating men for the business, which is as follows:

We first endeavor to secure men with some selling ability, and they are required, after a reasonable length of time, to stand an examination comprising some questions pertaining to the gas business. They are then shown the result of their examination, and put right as to the various answers to the questions. They are provided with a handbook which deals with the lighting business generally, and each day taken in charge by a different experienced salesman until each territory has been covered. This is for the purpose of showing them how the work is installed and to learn the various ways of approaching customers, etc.

We were prompted to write the handbook, previously mentioned, by the fact that every salesman, at one time, was apt to attempt to answer questions which they were unable to do, with the result that a great many stories were circulated regarding the information that gas company employees were handing out. To this book, information regarding new subjects is added from time to time, as necessity demands.

The salesmen are assembled at the office at 8:45 A.M., where a meeting is held until 9:15 A.M. During this meeting the proceedings are as follows:

Their daily report sheets and prospect cards must be ready at the same time and presented at the meeting. The men are then given


The Consumers' Gas Company of Toronto

RECEIVED 945 A.M. COMMERCIAL DEPARTMENT CALL CARD No 01

Aug. 22nd 1913

Issued to Fielder At 9.45 A.M.

Address 19 Toronto St.

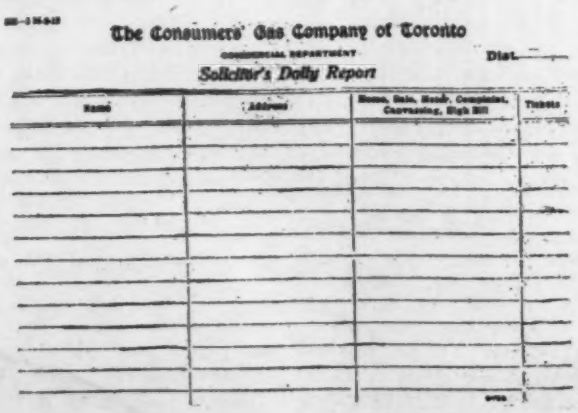
Name Jno Smith

Wants information regarding lighting stove

Appointment At once

Returned Aug. 22nd 1913 By J. Simpson

their day prospects and advised how to settle any difficulties they may have encountered in the previous day's business. They are required to get in touch with the office between 1:20 and 1:40, to receive any prospects that may have come in to the office.


The Consumers' Gas Company of Toronto

COMMERCIAL DEPARTMENT Dist.

Solicitor's Daily Report

Name	Address	Name, Sale, Result, Complaint, Canvassing, High Bill	Times

The lighting districts are numbered from 1 to 8, and the building districts 9 to 10. The salesmen on districts 2, 3, 4 and 5 report personally at noon, the others who are too far out to get in touch with the office, phone, which saves a great deal of time.

The salesmen are required to make a daily report which indicates the sales made, etc. Any prospect cards that are received by the men are issued in duplicate. Duplicates being retained as a check against the original until the latter are returned with satisfactory reports. In the event of the prospect card remaining out longer than seems necessary, a second card is issued for its return at once. If a prospect card is turned back saying that the prospective customer will be open to do business at some future date, a recall card is made out, put on the date file, and handed out on that day. The districts are not worked indiscriminately, but in a continuous process. This generally enables the salesmen to cover his district once a day, and insures all parts of his district being regularly canvassed. It also does away with the covering of ground twice in one day. We have three systems for keeping a record of the work done: (1) Point system; (2) map, and (3) meter.

In the point system the salesman is given one point for every foot of gas per hour a lamp may consume. For instance, a lamp consuming 18 feet, he would get 18 points; two points per dollar are given for piping; 50 points for removing controllers; 50 per cent additional for displacing electric lighting. He is debited at the same rate for removals and 10 points for every dollar lost on piping.

Map System.—The districts are outlined and numbered. A tab is affixed to each territory, on which is put each month the number of lamps he has in his territory. On the side of the map is marked the number of lamps each salesman had at the beginning of the year. If the number on tab falls towards the number on the side, or even lower, he is asked to explain it. If it is caused through competition of the electric companies he is given help. If this is not successful he is changed to some other territory.

Meter System.—In this system a card is issued for every meter applied for at the office; the salesman takes this and goes after the business, and the returned report must show whether he got a contract, or if the consumer is using his own fixtures or electric light, the idea being to obtain 100 per cent. by getting a contract from every consumer taking a meter.

The work of this department is to put lamps out on a rental basis for commercial purposes only. Other business is taken care of by the house maintenance branch of our company. The lamps are put out subject to the condition in contract shown here, for a period of not less than a year. The lamps are cleaned every week and charged for as follows:

5-burner Humphrey outdoor inverted, $10.20 per year, 85 cents per month.

3-burner Humphrey outdoor inverted, $8.40 per year, 70 cents per month.

4-burner Humphrey outdoor vertical, $8.40 per year, 70 cents per month.

5 burner Humphrey indoor inverted, $10.20 per year, 85 cents per month.

3-burner Humphrey indoor inverted, $8.40 yer year, 70 cents per month.

4-burner Humphrey indoor vertical, $7.20 per yea r, 60 cents per month.

3-burner Humphrey indoor vertical, $7.20 per year, 60 cents per month.

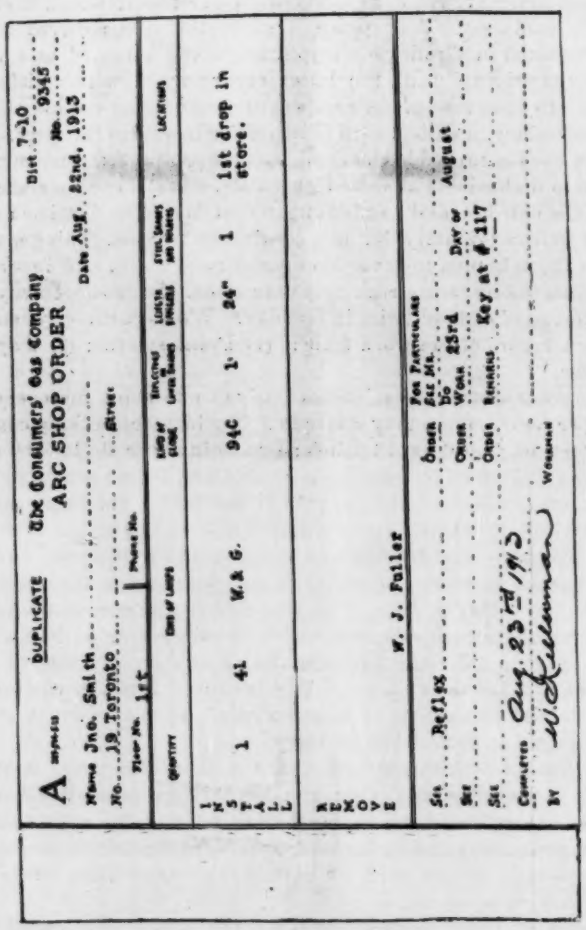
Renewed every 2 years, with 10 cents off for prompt payment.

4-burner reflexolier, $10.20 per year, 85 cents per month.
3-burner reflexolier, $10.20 per year, 85 cents per month.
2-burner reflexolier, $7.20 per year, 60 cents per month.
1-burner reflexolier, $4.20 per year, 35 cents per month.
Renewed every year.

The only exceptions are for committee rooms and exhibitions, lasting from 1 day to 1 month, for which we charge $3 per lamp. For factories we use the 4-burner, Humphrey vertical factory lamp, the charge for which is $6 net, but allowance must be made for 3 summer months when not in use, which makes it $4.50 net. To avoid trouble as to which month's payments should be made we spread this $4.50 net over 12 monthly payments, which is 37½ cents net per month, or $4.50 per year. I will now give you the rules we use to insure uniformity in installing arcs and reflexoliers.

Arcs.—These lamps cannot be placed closer to the ceiling than 10 inches. So, with this length hanger, it is not possible nor a good

policy to install it in stores whose ceilings, are only 9 feet. The same may be said of 9-foot 6-inch ceilings except where they are placed in windows which have no goods to be spoiled by heat, or over work tables.


A DUPLICATE The Consumers' Gas Company ARC SHOP ORDER
Dist. 7-10 No. 9345
Name Jno. Smith Date Aug. 22nd, 1913
No. 19 Toronto Street
Floor No. 1st Phone No.

	Quantity	Size of Lamps	Kind of Globe	Reflectors or Lower Shades	Length Required	Steel Shades and Holders	Locations
Install	1	41 W.A G.	94C	1	24"	1	1st drop in store.
Remove							

Set Reflex Order No. For Particulars See Mr. W. J. Fuller
Set Order No. Work 23rd Day of August
Set Order No. Remarks Key at # 117
Completed Aug. 23rd 1913
By W. Kalbfleisch Workman

For 10-foot ceilings, use 10-inch hanger.
For 10 foot 6-inch ceilings, use 12-inch hanger.
For 11-foot ceilings, use 18-inch hanger.
For 11-foot 6-inch ceilings, use 24-inch hanger.

And for ceilings above this add the increased difference of ceiling to hanger.

As a means of systematizing and identification and also the saving of a great deal of time in writing orders, we number our arc lamps and globes as follows:

3 Burner indoor vertical, No. 21—9 by 4 fitter, 94; C (clear) or A (alabaster).

4 Burner indoor vertical, No. 41—9 by 4 fitter, 94; C (clear) or A (alabaster).

3 Burner indoor inverted, No. 31—10 by 6 fitter, 106; C (clear) or A (alabaster).

5 Burner indoor inverted, No. 51—10 by 6 fitter, 106; C (clear) or A (alabaster).

4 Burner outdoor vertical, No. 42—11 by 4 fitter, 114; C (clear) or A (alabaster).

3 Burner outdoor inverted, No. 32—9 by 6 fitter, 96; C (clear) or A (alabaster).

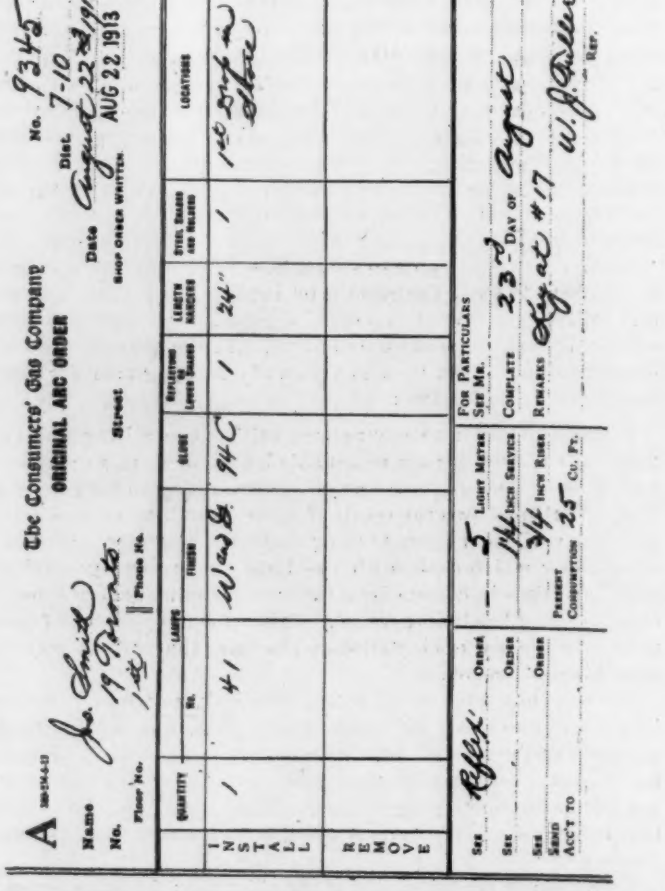
5 Burner outdoor inverted, No. 52; 10 by 7 fitter, 107; C (clear) or A (alabaster).

4 Burner factory vertical, No. 43; 9 by 4 fitter, 94; C (clear) or A (alabaster).

3 Burner factory inverted, No. 33; 9 by 6 fitter, 96; C (clear) or A (alabaster).

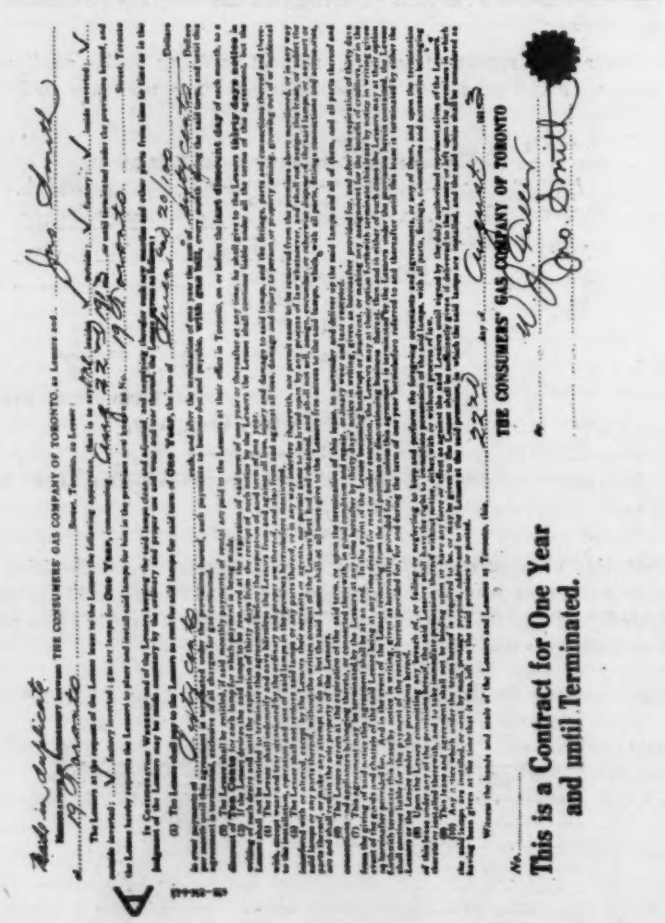
Reflex.—Reflex should be placed 8 feet 6 inches from the floor, where possible, and at least a 30-inch fixture must be used, if ceilings are to be kept clean; but, with ceilings under 10 foot 6 inches, this is not possible, so a compromise is made, as follows: 9-foot and 9-foot 6-inch ceilings use a 24-inch fixture; 10-foot, 10-foot 6-inch and 11-foot ceilings use a 30-inch fixture, and for ceilings above this add the increased difference of ceiling to length of fixture.

Salesmen are specially cautioned to keep a lookout for broken glassware, mantles, crooked and defective lamps, which are immediately reported and promptly attended to. To better keep in touch with the lighting conditions in their territories the salesmen are required to cover their districts at night at least once in two weeks. Now, gentlemen, I think you will readily see that this Company is making an honest effort to render that service to the public which is so necessary to the success of any up-to-date business firm.


A The Consumers' Gas Company ORIGINAL ARC ORDER
No. 9345
Name Jno. Smith Dist. 7-10
No. 19 Toronto Street Date August 22nd 1913
Floor No. 1st Phone No. Shop Order Written AUG 22 1913

	Quantity	Lamps No.	Lamps Finish	Globe	Reflectors or Lower Shades	Length Required	Steel Shades and Holders	Locations
Install	1	41	W.A.G.	94C	1	24"	1	1st drop in store
Remove								

Set Reflex Order No. — 5 Light Meter For Particulars See Mr.
Set Order No. 1½ Inch Service Complete 23rd Day of August
Set Order No. ¾ Inch Riser Remarks Key at #17
Send Present Consumption 25 Cu. Ft. W. J. Fuller Rep.
Acct To


Made in duplicate
THE CONSUMERS' GAS COMPANY OF TORONTO
This is a Contract for One Year and until Terminated.

New Methods and Appliances.

AN ELECTRIC COAL TRUCK.—The illustrations show a 3½-ton electric coal truck that is being put on the market by The Couple-Gear Freight Wheel Company, of Grand Rapids, Mich., the initial sample having been built to the order of the Blackstone Valley Gas and Electric Company, Pawtucket, R. I. To accommodate the basement construction at Pawtucket the truck was built low and capable of making sharp

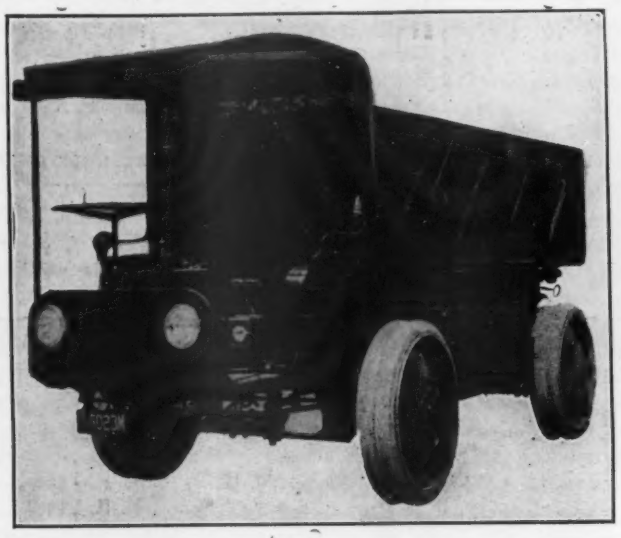


Fig. 1.

turns. It can be turned in a 24-foot wide street. without manipulating the steering gear, the same having been set at the correct angle.

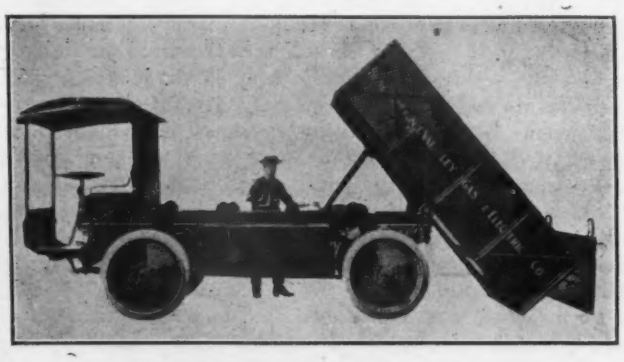
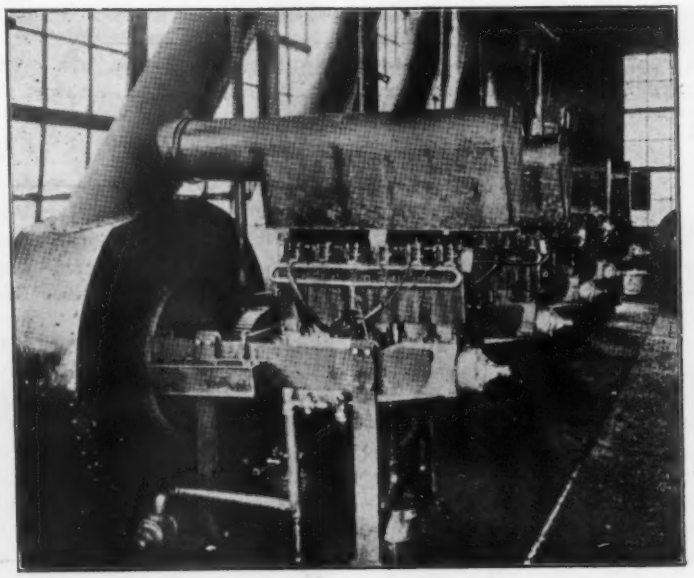


Fig. 2.—Truck in Dumping Position.

The equipment is calculated for a speed ranging between 5 and 10 miles per hour. This truck is equipped with nickel-iron, alkaline cells made by the Edison Storage Battery Company.

TESTING AUTOMOBILE ENGINES WITH CITY GAS.—Mr. J. F. Magee details, in a recent issue of the U. G. I. Co.'s excellent manual on "New Business," these facts: The increased cost of gasoline has caused users of gasoline engines to look to city gas as a substitute. It is safe to say that any owner of a stationary gasoline engine is losing money if he can buy city gas for $1 per 1,000 cubic feet or less. Another simple proposition is the application of city gas in the testing of automobile engines in the factory and repair shops. Here is shown a view in the testing room of an automobile factory where engines are running on 10-hour tests with city gas, replacing gasoline for fuel, from which is derived large monthly consumption. At present there are 6 of these testing stations or "firing jacks," as they are called, in continuous use. Owing to the construction of an automobile engine, more gas per horse power is used than in the stationary engine; but this applies to gasoline as well as to gas. In this factory the engines are first run 18 hours by electric motor, for the purpose of smoothing the bearings and reciprocating parts. The engines are then placed on the "firing-jack,,' and connected by means of a flange to a stationary gas and air-mixing device of simple construction, shown in the accompanying sketch. It consists of (*G*) ¾-inch gas inlet, (*A*) ¾ inch air inlet, (*F*) flange to be bolted to engine. With the exception of a 1-inch gas engine regulating cock and the bolting flange, the entire device is made of pipe fittings. No anti-fluctuator is necessary, as the explosions are so rapid that the



Testing Automobile Engines with City Gas at Syracuse.

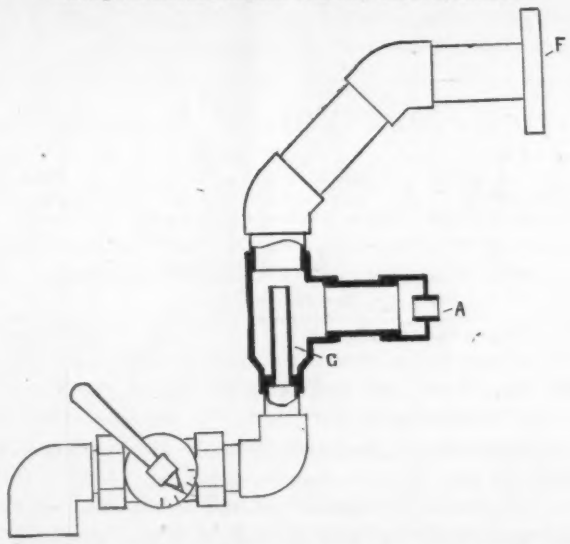


Diagram of Air-Mixing Device connected to "Firing-Jack" for Testing Automobile Engines.

intake is practically steady. Ten hours' continuous running with a variable horse power load, derived from operating a large fan, which also takes away the exhaust gases, will bring out defects in workmanship or material. If considered perfect after this test, the engine receives its carbureter, and a final adjustment for gasoline, is then placed on the chassis and is ready for the road test.

The engines run much smoother on city gas than on gasoline, and, besides an actual saving in money, an appreciable saving in labor is made. Taken altogether the proposition is a success. and all parties concerned are well pleased.

PREVENTION OF CORROSION IN BOILERS AND CONDENSERS.—A method, by the use of which it is claimed not only are corrosion and pitting in boilers avoided, but the formation of scale prevented, has recently been introduced into England from Australia, where it has been extensively used with satisfactory results. It is known as the Cumberland process, and is based on the hypothesis that galvanic action is the cause of the corrosion and pitting. It consists in immersing, in the water of the boiler or condenser, one or more iron anodes, connected to the positive terminal of a source of electrical energy, and the boiler or condenser to the negative terminal of the source of energy. The anodes are insulated from the metal of the boiler, so that the path of the electric current is through the water, which acts as the electrolyte. A direct current, with a pressure of from 6 to 10 volts, is used. The current in passing from the anodes to the boiler shell decomposes some water, and while the oxygen liberated is attracted by the anode, the hydrogen forms a coating on the boiler shell. The result is that although the anode is attacked and eaten away, the hydrogen formed on the surface of the shell protects it from corrosion, and the mechanical action of the hydrogen formed between the metal and the scale, loosens and carries away into solution all

dirt, scale and grease adhering. If the boiler is already free from scale, the hydrogen prevents scale or solids from settling on or adhering to it, and neutralizes the corrosive effects of acids, oils, or free oxygen contained in the water.

Book Reviews.

A "Business Compass."—A booklet bearing this title has just been issued by the "Tabulating Machine Company," the purpose of which is to describe methods of tabulating and analyzing statistics of all sorts—manufacturing, sales, insurance, transportation, etc. The method depends upon the use of punched cards coupled with a properly arranged code system adapted to each individual business. The various columns on the cards may be made to represent anything and to analyze anything, from prevailing styles in shoes to the amount of sales in any place for the last year; the tonnage of a certain furnace or mill over any desired period; the cost of building a tool or other product of a certain type and size; or to locate the date on which a certain man at some period long past was working on a certain machine—this for the suitable handling of an accident suit, or for any other purpose for which it might conceivably be used. The system has been perfected for commercial use, and has been adopted by hundreds of concerns all over the country. It is fast being extended from the larger to the smaller concerns, many of whom report the continued discovery of new uses for the system.

Recent Patent Issues.

Prepared for the AMERICAN GAS LIGHT JOURNAL by ROYAL E. BURNHAM, solicitor of patents and counselor in patent causes, 833 Bond Building, Washington, D. C., from whom illustrations and specifications of any patent mentioned below may be obtained for 20 cents.

1,069,867. Method of Producing a Retarded Combustion of a Gas Flame. H. L. Doherty, New York City.

1,070,016. Automatic Gas Burner. C. R. Clark, New Haven, Conn., assignor of one-half to F. P. Clark, same place.

1,070,097. Gas Range. J. A. Alexander and F. K. Berry, Battle Creek, Mich., assignor to A. B. Stove Co., same place.

1,070,187. Safety Device for Gas Valves. W. Schoeler, Breslau, Germany.

1,070,344. Burner. R. Iglesias, Santo Domingo, Dominican Republic.

1,070,398. Apparatus For and Method of Cleaning Gases. H. A. Brassert and R. W. Cousins, Chicago, Ills.

1,070,409. Gas Generator. G. Christians, Freeport, N. Y.

1,070,529. Water Heater. T. J. Radke, Oak Park, Ills.

1,070,544. Inverted Incandescent Gas Burner. P. Schroeder, Berlin, Germany.

1,070,556. Device for Detecting Suspended Matter in Gases. W. W. Strong, Pittsburgh, Pa.

1,070,679. Dry Gas Meter. L. B. Gawtry, New York City.

1,070,721. Gas Generating Apparatus. G. Osten, Perry, Ia.

1,070,812. Burner for Gas Stoves. J. E. Kennedy, Washington, D. C.

1,070,825. Means for Operating Gas Producers. H. E. Longwell, Pittsburgh, Pa., assignor, by mesne assignments, to The Colonial Trust Company, Trustee, same place.

1,070,875. Burner for Incandescent Gas Lighting. W. C. Pendleton, Salford, England.

Items of Interest
FROM VARIOUS LOCALITIES.

THE output of the Old Colony (Mass.) Gas Company for July last was 5,531,000 cubic feet, or a gain of 2,529,000 over the output the corresponding month in 1912.

THE residents of Darlington, South Carolina, are demanding that someone should build a gas plant there. So declares the Darlington Town Clerk, who is ready to afford any information to capitalists or gas works constructors that may be necessary in the premises. And it looks that the information may be accurate for the population of the place has more than doubled in 10 years. In 1903 it had 3,250 residents; in 1913 it shelters considerably over 7,500. Darlington is the capital seat of a similarly named county of South Carolina, and is on the Atlantic Coast Line at a point 35 miles southeast of Chesterfield. It has a number of factories of diversified output, such as cotton, cotton seed oil, tobacco, fertilizers and the like. It has three banks, two good hotels, several large stores and many handsome residence structures.

THE right to construct and operate a gas plant in Martinez, Cal., has been awarded to Mr. S. Waldo Coleman (President of the Coast Counties Gas and Electric Company) and associates of the Board of Supervisors of the named place.

THE Davis Meter Company has been incorporated by Messrs. A. E. Davis and H. B. Thornton, of San Diego, Cal., and Mr. A. H. Gardner, of Tombstone, Arizona. It is to engage in the manufacture of gas meters and other gas appliances; is capitalized in $100,000, and its principal place of business is San Diego.

"B. R.," writing from New Bedford, Mass., says: "At the recent meeting of the shareholders of the New Bedford Gas and Edison Light Company it was voted to increase the capital stock by the issuance of 2,650 new shares, the selling price thereof to be $200 per share, subject to approval by the State Board of Gas and Electric Light Commissioners. Shareholders of record, of course, are to be given priority in respect of subscription, and the proceeds of the issue are to pay for extensions (past, present and prospective) and betterments on plant account. The officers elected were: Directors, Messrs. G. R. Stetson, C. A. Cook, C. R. Price, W. H. Pitman, F. Taber, F. H. Gifford, O. Prescott, P. M. Lund, John O. Perry, L. B. Bates and H. M. Knowles. The Directors perfected the following executive organization: Chairman of the Board, George R. Stetson; President, Oliver Prescott; Vice-President, Frank H. Gifford; Treasurer and Clerk, Charles R. Price; General Manager, Wm. H. Snow,"

A CORRESPONDENT incloses the following from a recent issue of the Baltimore (Md.) *Sun*: "The Consolidated Gas and Electric Company seems to be so well versed on the subject about which we know nothing that we feel we should certainly give it the benefit of the doubt," said Mr. George A. Whiting, President of the Standard Guano Company, of Baltimore, in withdrawing an appeal for a rebate on its bills, which he had sent to the Public Service Commission of the State. He asked for a rebate on the ground that there had been considerable leakage, owing to the groundings of connections. On its part, the Gas and Electric Company, through Vice-President Herbert A. Wagner, after going into detail in the matter, pointed out that a claim for a rebate, because the customer had no benefit out of the leakage "Would be as unjust as a claim made against an ice company for ice delivered on the consumer's premises and left out in the sun to melt by the consumer's employees, instead of being at once placed where it would be utilized for cooling purposes."

MR. JACK P. DAVIDSON, formerly representing the W. F. Boardman Company, of San Francisco, Cal., has resigned that position to accept a responsible place on the Pacific Coast forces, in San Francisco, of the General Gas Light Company.

THE front on Fifth street and the entrance on Frahklin street of the beautiful new Public Library building in Reading, Pa., are to be illuminated by two clusters of gas arc lamps, each lamp carrying four burners. These lamps were donated or presented to the Library management by Superintendent John H. Keppelman, acting for the Consumers' Gas Company, and have been formally accepted. In commenting on this act the Reading *Times* remarked; "Since the lights, mounted on ornamental iron poles, were erected at a cost of $200 several weeks ago, as a gift to the city by the Company, much comment has been heard about the splendor of the Franklin street entrance at night, as compared with the aspect of the magnificent front portals. It was at first thought by the donors that the electric street light would suffice, but when the contrast became apparent it was decided to supplement the original presentation and add to the attractiveness of Reading's finest public building."

MR. AYERS C. BALDWIN, for many years Manager of the Atlantic avenue branch of the Brooklyn Union Gas Company, died in his home, 144 Garfield Place, the morning of the 26th ult., and interment was made the afternoon of the 28th. Mr. Baldwin, who was in his

72d year, was prominent in Masonic circles, and had long been an active member of Bedford Lodge.

"B. R. M.," writing from Salem, Mass., under date of the 30th ult., says that Robert Hannible, for quite some time in the service of the Salem Gas Light Company, has resigned in order to complete his course in the Oak Grove Seminary, with a view to devoting his future to the cause of the ministry. He was and is greatly esteemed by his fellow workers.

THE Central-Hudson (N. Y.) Gas and Electric Company has made application to the Secretary of War through the United States Engineer, District No. 1, New York, for a permit to lay a power cable across the Hudson river, from Newburgh to Fishkill. It will supply power from the Central Hudson Gas and Electric Company to the South Dutchess Gas and Electric Company.

MR. HUGH M. BEUGLER, Manager of the Poughkeepsie division of the Central-Hudson (N. Y.) Gas and Electric Company, is our authority for the statement that the old plant on Laurel street, although doomed, will not be put out of commission until next spring.

MR. CHARLES L. PAGE, counsel for the Manchester (Va.) Heat, Light and Power Company, has applied to the Street Committee of the Richmond (Va.) City Council, for permission to extend its main system to and through certain streets that would enable it to supply gas in a section of Richmond city not now piped by the municipal gas works. The Company proposes to shut down the acetylene makeshift that it has been operating, and forthwith construct a plant of modern type, to be located on the site of or nearby to the one now occupied, and will furnish therefrom a good quality of gas, charging therefor not to exceed 90 cents per 1,000 cubic feet. Further, the Company admits the right of the authorities to revise the selling rate at stated intervals. The original franchise (that is, the one under which the acetylene system was granted life) has 17 years to run, and the Company, in view of the foregoing agreements and concessions, asks that the life of the franchise be extended to cover an additional period of 30 years.

CHANGES proposed in the gas main system of the Richmond (Ind.) Light, Heat and Power Company, involve an expenditure of $20,000. The work is in charge of Mr. J. B. Wharton.

MR. FRANK T. HAMILTON, President of the Omaha (Neb.) Gas Company, sailed for Europe some days ago, on a trip that will cover 2 months or more. Meanwhile his journeying will not delay the "gas hearing" proposed there in long drawn out continuance. Manager G. W. Clabaugh will be on the ground to take care of the Company's part in this seemingly interminable affair.

"L. R. V.," writing from Kenosha, Wis., under date of the 29th August, incloses the following: "The Wisconsin Gas and Electric Company has been given a satisfactory rating by the Wisconsin Railroad Commission, in so far as the quality of gas distributed in Kenosha is concerned. For some time past the Commission has been conducting exhaustive tests regarding gas pressure and gas quality in various Wisconsin cities, which tests were carried on with the view of determining a basis for the promulgation of new gas standards in the State. Tests were made in Kenosha for a period of 2 days without the knowledge of the local Company. The minimum tests were conducted in the residence of Mr. Charles T. Jorgensen, at the south end of Durkee avenue, the last point of service for the Company towards the southern limit of the city. Mr. A. L. Shapiro directed the examinations in the capacity of expert for the State; and his report of the findings, as filed with the Board is the following: 'July 30th and August 1st, I made an inspection regarding the quality of gas service furnished by the Kenosha Company. The heat value at the time of the inspection was 621 British thermal units, and the average heat values taken during the past 4 months appear to be satisfactory. There was no trace of H_2S, and the pressures, at the 8 points selected, as shown by the figures, were entirely satisfactory. The minimum was observed at 800 Durkee street, when the figures stood at 1.9. No summary was made of meter test records.'" Continuing, our correspondent remarks that the State Commission is planning to maintain a close supervision over gas and electric companies all over the State, and in fact it is probable that tests have even now been made of the electric service in Kenosha.

THE appointment by Acting Chancellor Becker, of Mr. Charles F. Cox, of Bridgeton, N. J., as Receiver for the South Jersey Gas Company's plant at Swedsboro, N. J., became effective the 28th ult. The Hoffman petition, under which the proceedings were instituted, avers that the financial status of the concern is: Assets, $121,054; liabilities, $218,898.

"I HAVE to inform you of the death (in Portland, Ore.) on August 22d, of Mr. A. H. Wilson, for well over 20 years, a faithful, valued employee of the Portland Gas and Coke Company. When the Company's pension system became effective, Mr. Wilson was one of the first to share its benefits. He was in his 68th year, and for 30 years was prominent in Coast Masonic circles. He is survived by his wife and one son. He was much esteemed.—G. B. M."

THE *Chicago Examiner* of recent date states that a special meeting of the shareholders of the Peoples Gas Light and Coke Company of that city is being arranged, the main purpose of which will be to authorize an increase of the capital to $60,000,000, from the present amount of $35,000,000. A portion of the increase will be offered forthwith to shareholders at par, to raise funds for constructing the Company's proposed new gigantic gas manufacturing plant. It is rumored (and with quite a good foundation for the rumoring) that a percentage of the new stock will be available for free distribution to shareholders in the form of a special dividend, quite after the manner the Commonwealth Edison Company recently determined to capitalize the surplus by declaring a 10 per cent. stock dividend. The Company proposes to expend between 6 and 8 million dollars on the new plant within the next two years. * * * Eventually, it is declared that the plant will require an expenditure of 30 millions.

MR. E. H. HOLLINGSWORTH, for some time past in charge of the commercial division of the American Gas and Electric Company's possessions in Wheeling, West Va., has been named to organize and manage a like division in connection with its properties in Salt Lake City, Utah.

THE time for the conversion (at 100 per cent.) of the preferred stock of the Baltimore Gas, Electric Light and Power Company into its common stock, expired the 1st inst., and the period will not be further extended.

"B. A. F.," writing from Athol, Mass., under date of August 30th, incloses this: "That hustling gentleman, Mr. George McKnight, Superintendent of the Athol Gas and Electric Company, has been busily engaged installing the necessary gas equipment in the modern High School structure, which equipment is to be operated in connection with the domestic science course that will hereafter form part of the work in respect of the High School studies. The outfit includes a large gas range (cabinet type), 20 two-burner plates, and a bungalow water heater. To afford ample supply at sufficient pressure a 3-inch main was run into the building. The Domestic Science Class will take up the study of how to properly cook all sorts of food stuffs, and as the pupils advance the study of advanced dietal problems will be taken up."

MR. JOHN H. MCDERMOTT, of Allentown, Pa., is one of the main factors in connection with the gas plant that is to be erected and operated for the supply of Lehighton, Pa., and nearby settlements. The plant will be located at Koonton, on the Lehigh Valley Railroad, and it looks to a disinterested observer that, if the concern is not over-capitalized, and, if it is operated on good business lines, it should be a go from the start.

IF confirmation were needed of the fact that the interests of the United Gas and Electric Corporation and those of the American Cities Company are to be merged, were needed, that proof would certainly seem at hand. In any event the shareholders in the former have been notified to appear in special meeting the 24th prox., to authorize an increase of the capital stock for the purpose of acquiring possession of the properties of the last named.

THE Town Board, of Riverhead, Long Island, has acceded to the franchise asked for by the promoters of the Consumers' Gas Company.

BECAUSE of the yearly increases in taxes levied on the property of the Manitowoc (Wis.) Gas Company its proprietors have appealed to the Railroad Commission for the right to increase selling rates. In 1908 the taxable value was $86,225; in 1912, the valuation has been raised to $152,050.

The Market FOR GAS SECURITIES.

The traders for the rise in Consolidated are in accord over voicing the verselet "I wonder what I was begun for, that I was so soon done for!" Just as we were prepared to settle down and witness a steady, prolonged advance in the shares, along comes news that the United States Courts were countenancing a move against some railroad combination or another. Flop goes Consolidated, and the gains of 2 weeks are wiped out in 2 days! It is to mourn. The quotation to-day (Friday) at the opening was 129½ to 130. Let it go at that.

Meanwhile Brooklyn Union seems unaffected by the Reading Railroad reprisals reference. The quotation (127 to 130) is identical with that of a week ago. Peoples, of Chicago, is unchanged, and it is quite likely that the details of the scheme with respect to the proposed capital increase will be made known before October 1st. Laclede common is up a point or so, and Massachnsetts gas issues are as before. The Standard Gas and Electric Company will pay its dividend on the preferred for the last quarter at the former rate of $2, but it will take the shape of a distribution of 2 per cent. in negotiable scrip. This, as one authority remarks, will enable it to retire $500,000 par value of coupon notes, maturing June 1st, 1914.

The rumor-mongers again have it that the U. G. I. Company and the Philadelphia Electric are talking about consolidation, or joint-ownership. In any event U. G. I. keeps steady and strong, and Philadelphia Electric is advanced perhaps half point. Pacific Gas and Electric is dull, at 38 to 39½, and Vice-President Britton is out in a strong statement denying that there is any truth in the remark that the Company was in any sense curtailing its activities on construction account.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

115 BROADWAY, NEW YORK CITY.

SEPTEMBER 8.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par alue of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked*
Consolidated Gas Co.	$99,816,500	100	129½	130
Central Union Gas Co.—				
1st 5's, due 1927, J. & J.	3,500,000	1,000	101	103
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	105	106
Mutual Gas Co.	3,500,000	100	157	157
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	99	101
New York & Richmond Gas				
Co. (Staten Island)	1,500,000	100	59	62
1st Mtg. Gold Bds. 5 p. ct.	1,500,000	—	98¼	100½
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	103	105
Con. 5's, due 1945, J. & J.	1,500,000	—	96	100
Northern Union—				
1st 5's, due 1927, J. & J.	1,250,000	1,000	100	102
Standard	5,000,000	100	102	104
Preferred	5,000,000	100	93	94
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	90	95
The Brooklyn Union	15,000,000	1,000	127	130
1st Con. 5's, due 1948, M. & N.	15,000,000	—	106¾	107
Yonkers	200,650	500	130	—
Out-of-Town Companies.				
Binghampton Gas Works	450,000	100	—	—
" 1st Mtg. 5's	509,000	1,000	97	100
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	83	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
Bonds, 5's	5,250,000	1,000	59	60
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed				
Gold Bonds	7,660,000	1,000	104	106¼
Columbus (O.) Gas Co., 1st				
Mortgage Bonds	1,500,000	1,000	96	98
Columbus (O.) Gas Lt. &				
Heating Co.	1,682,750	100	90¼	91
Preferred	3,026,500	100	75¼	80
Essex and Hudson Gas Co.	6,500,000	—	133	136
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co.,				
1st Mtg. 5's	1,350,000	1,000	100	101
Hartford	750,000	25	190	200
Hudson County Gas Co., of				
New Jersey	10,500,000	—	130	133
" Bonds, 5's	10,500,000	—	104	106
Indianapolis	2,000,000	—	85	90
" Bonds, 5's	2,650,000	—	90	93
Jackson Gas Co.	250,000	50	82	—
" 1st Mtg. 5's	290,000	1,000	97	100
Cincinnati Gas and Electric Co.	29,500,000	100	87	90
Kansas City Gas Light Co.,				
of Missouri	5,000,000	100	—	86
Bonds, 1st 5's	3,822,000	1,000	98½	99
Laclede Gas Co., St. Louis.	10,000,000	100	96	97
Preferred	2,500,000	100	—	102½
Bonds	10,000,000	1,000	102½	103
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	120	130
Madison Gas and Electric Co.				
" 1st Mtg. 6's	400,000	1,000	106	
Massachusetts Gas Companies, of Boston	25,000,000	100	91	91½
Preferred	25,000,000	100	91	91½
Montreal L. H.& P., Canada	9,000,000	100	212¾	212½
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	97	98
Bonds, 6's	6,000,000	—	127	128
New Haven Gas Co.	5,000,000	25	183	190
Peoples Gas Lt. & Coke Co.,				
Chicago	25,000,000	100	117	118
1st Mortgage	20,100,000	1,000	103	103½
2d "	2,500,000	1,000	104	—
Rochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104¾	105¼
Pacific Gas and Electric Co.	15,500,000	—	38	39½
St. Joseph Gas Co.—				
1st Mtg. 5's	1,000,000	1,000	96	98
St. Paul Gas Light Co.	2,500,000	100	—	—
1st Mortgages, 6's	650,000	1,000	104	105
Extension, 6's	600,000	1,000	113¾	115
General Mortgage, 5's	3,447,000	1,000	94	96
Syracuse Gas Co., N. Y.	1,975,000	100	50	55
Bonds	2,047,000	1,000	101	103
United Gas Imp. Co.	55,502,960	50	172	173
Washington (D. C.) Gas Co.	1,600,000	200	420	430
1st Mortgage, 6's	600,000	—	—	—
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	—	—

MEETING TIMES OF THE VARIOUS GAS ASSOCIATIONS.

American Gas Institute.—Annual meeting, Richmond, Va., October 15-17, 1913. Officers: President, W. R. Addicks, New York City. Secretary, Geo. G. Ramsdell, 29 West 39th st., N. Y. City.

Canadian Gas Association.—Annual meeting————1914. Officers: President, A. A. Dion, Ottawa; Secretary and Treasurer, John Keillor, Hamilton, Ont.

Empire State Gas and Electric Association.—Annual meeting, New York City, Oct. 8, 1913. Officers: President, C. G. M. Thomas, Long Island City, N. Y.; Secretary, C. H. B. Chapin, 29 W. 39th street. New York City.

Gas Meeters.—Monthly Section Meetings; Grand Commissioner, Will. W. Barnes. East Orange, N. J.; Gen'l Sec'y, H. Thurston Owens, La Crosse, Wis.; New York Section, Chairman, W. H. Pettes; Secretary, G. E. Smith, Sipp Avenue, Jersey City, N. J. Philadelphia Section; Chairman, Stanley Grady; Secretary, H. E. Stiteler, Broad and Arch streets. Cleveland Section, Chairman, F. R. Hutchinson; Secretary, Wm. Holtz, East Ohio Gas Co. New England Section, Chairman, T. W. Jennings, Boston; Sec., F. K. Wells, 60 Broad street, Boston. Winona Section, Winona, Minn., W. F. Clausen, Chairman. Bethlehem Section, Trueman Weithnecht, Chairman; Sec.-Treas., Truman Buss, South Bethlehem, Pa.

Guild of Gas Managers of New England.—Annual meeting, March, 1914. Young's Hotel, Boston; monthly meeting, second Saturday. Officers: President, Walter G. Africa, Manchester, N. H.; Secretary, H. K. Morrison, Brockton, Mass.

Illinois Gas Association.—Annual meeting, March 18th and 19th, 1914. Chicago, Ills. Officers: President, W. F. Barrett, Chicago, Ills.; Secretary-Treasurer, Horace H. Clark, 115 No. Oak Park avenue, Oak Park, Ills.

Illuminating Engineering Society.—Annual meeting,———— September, 1913. Meetings of Sections, monthly. Pres., Preston S. Millar; General Secretary, J. D. Israel, 29 W. 39th street, New York City. Sections: New York, Secretary, C. L. Law, 124 West 43d street. New England, Secretary, H. C. Jones, 10 High street, Boston, Mass. Philadelphia, Secretary, L. B. Eichengreen, Broad and Arch streets. Chicago, Secretary, J. B. Jackson, 28 North Market street. Pittsburgh, Secretary, J. C. Mundo, Oliver Building.

Indiana Gas Association.—Annual meeting, March —— —— 1914. Terre Haute. Officers: President, A. S. Cooke, Terre Haute; Vice-President, A. C. Blinn, Evansville; Secretary-Treasurer, Philmer Eves, Indianapolis.

Iowa District Gas Association.—Annual meeting, Davenport, May 27, 28, 29, 1914; Officers: President, B. C. Adams, Lincoln, Neb.; Secretary, G. I. Vincent, Des Moines, Ia.

Kansas Gas, Water and Electric Light Association.—Annual meeting, October—— 1913. ———— Officers: President, L. O. Ripley, Emporia, Kas.; Secretary and Treasurer, W. H. Fellows, Leavenworth, Kas.

Michigan Gas Association—Annual meeting, September 17, 18 and 19, 1913. Detroit. Officers: President, W. S. Blauvelt, Detroit, Mich; Secretary-Treasurer, Glenn R. Chamberlain, Grand Rapids, Mich.

Missouri Electric Light, Gas, Water Works and Street Railway Association.—Annual meeting, April, 1914; Mexico, Mo. Officers: President, P. A. Bertrand, Joplin, Mo.; Secretary and Treasurer, P. W. Markham, Brookfield, Mo.

National Commercial Gas Association.—Annual meeting and gas show, Dec. 1-6, 1913. Philadelphia, Pa. Officers: President, C. W. Hare, Philadelphia Pa.; Secretary, Louis Stotz, 29 West 39th street, New York City.

Natural Gas Association.—Annual meeting, St. Louis, Mo., May 19 and 20, 1914; Officers: President, E. L. Brundrett, Kansas City, Mo.; Secy-Treas., T. Clive Jones, Delaware, O.

New England Gas Association.—Annual meeting, February, 18th and 19th, 1914, Boston. Officers: President, T. H. Hintze, Providence, R. I.; Secretary-Treasurer, N. W. Gifford, East Boston, Mass.

New Jersey State Gas Association.—Annual Meeting, July —, 1913, Asbury Park N. J. President, C. F. Butcher, Freehold, N. J.; Sec'y-Treasurer, O. F. Potter, Newark, N. J.

Ohio Gas Association.—Annual meeting, February ——— 1914, Columbus, O.; President, John M. Garard, Columbus, O.; Secretary, L. B. Denning, Columbus, O.

Oklahoma Gas, Electric and Railway Association.—Annual meeting, Oklahoma City May, ——1914. President, F. E. Bowman, Ada; Secretary-Treasurer, H. V. Boze Oklahoma City.

Pacific Coast Gas Association.—Annual meeting, San Jose, Cal., September 16, 17, 18, 1913. Officers: President, Henry R. Adams, Stockton, Cal.; Secretary-Treasurer, Henry Bostwick, 445 Sutter street, San Francisco, Cal.

Pennsylvania Gas Association.—Annual meeting, Allentown, Pa., April ———, 1914; Officers, President, J. A. Frick, Allentown, Pa.; Secretary-Treasurer, W. O. Lamson, Jr., West Chester, Pa.

Society of Gas Lighting.—Annual meeting Dec., 11, 1913; monthly meetings, second Thursday. Place, New York City. Officers: President, Fred. S. Benson; Secretary, George G. Ramsdell, 29 West 39th street, New York city

Southern Gas Association.—Annual meeting, Mobile, Ala., April 4, 1914, Officers: President, James Ferrier, Rome, Ga.; Secretary-Treasurer, E. D. Brewer, Atlanta, Ga.

Southwestern Electrical and Gas Association.—Annual meeting. May———— 1914, Galveston, Tex. Officers: President, G. H. Gifford, Fort Worth Tex.; Secretary H. S. Cooper, 405 Slaughter Bldg., Dallas, Tex.

Wisconsin Gas Association.—Annual meeting, May ————1914, Milwaukee, Wis. Officers: President, Ewald Haase, Milwaukee, Wis.; Secretary-Treasurer, Henry Harman, Milwaukee, Wis.